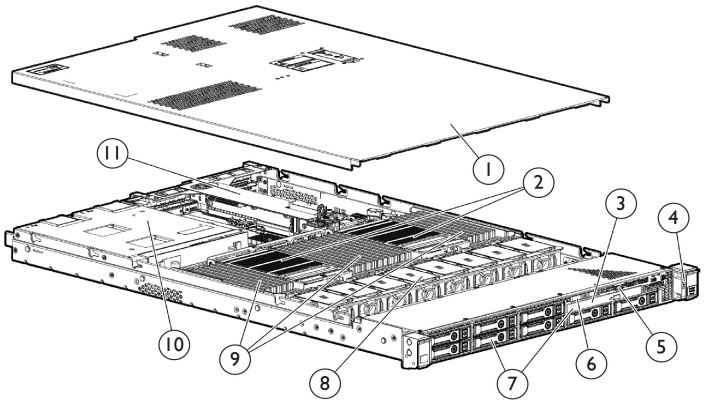
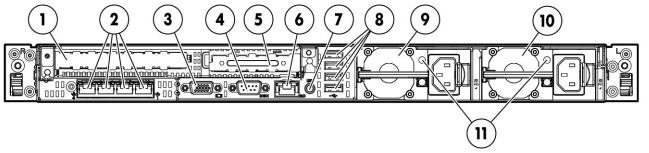
Overview

Performance driven compute with storage density - ideal for enterprise applications. Industry leading performance, efficiency, capacity and reliability. Enterprise enhanced design for all workloads with versatility for future requirements. A space conscious 2-processor server with industry leading feature sets. Built to protect your investment and extend the life with reliability, accessibility and serviceability features designed in.





Front View:

1. Hood Cover
2. Up to two Intel® E5-2600 Series processors
3. Optical Disk Drive Bay
4. Active Health and Network Status LEDs
5. Video connector (requires Front Video Adapter Kit)
6. Slide-out System Insight Display (SID)
7. Hard Drive Bays
8. Removable hot-plug fan modules for easy serviceability
9. 24 DIMM slots: DDR3 Registered (RDIMM), LRDIMM or Unbuffered (UDIMM) memory
10. Redundant Hot Plug Power Supplies (upgradeable option)
11. Removable Riser Cage assembly for 2 x PCIe 3.0 Slots

Rear View:

1. PCIe 3.0 Full-height/half length x16 expansion slot
2. FlexibleLOM ports (Shown: 4 ports 1Gb each /Optional: 2 ports 10Gb each)
3. Video connector
4. Serial connector
5. PCIe 3.0 Low Profile x8 expansion slot
6. iLO Management Engine NIC connector
7. Unit ID LED/button
8. 4 USB connectors
9. Power supply bay 2 (Shown populated: Optional Power Supply for Redundant Power)
10. Power supply bay 1 (Primary Power Supply)
11. Power Supplies Health/Activity Indicators

NOTE: For the Standard Features shipped in the "Factory Integrated Models", please see the "Configuration Information - Factory Integrated Models" section.

Processor
One of the following depending on Model

Entry Processors

NOTE: All support up to 1066MHz memory speeds.

Intel® Xeon® E5-2609 (2.40GHz/4-core/10MB/6.4GT-s QPI/80W)

Intel® Xeon® E5-2603 (1.80GHz/4-core/10MB/6.4GT-s QPI/80W)

Base Processors

NOTE: All support up to1333MHz DDR3 memory speeds.

Intel® Xeon® E5-2640 (2.50GHz/6-core/15MB/7.2GT-s QPI/95W, DDR3-1333, HT, Turbo2-3/3/4/4/5/5)

Intel® Xeon® E5-2630 (2.30GHz/6-core/15MB/7.2GT-s QPI/95W, DDR3-1333, HT, Turbo2-3/3/4/4/5/5)

Intel® Xeon® E5-2620 (2.0GHz/6-core/15MB/7.2GT-s QPI/95W, DDR3-1333, HT, Turbo2-3/3/4/4/5/5)

Intel® Xeon® E5-2630L (2.0GHz/6-core/15MB/8.0GT-s QPI/60W, DDR3-1333, HT, Turbo2-3/3/4/4/5/5)

Performance Processors

NOTE: All support up to 1600MHz DDR3 memory speeds.

Intel® Xeon® E5-2690 (2.90GHz/8-core/20MB/8GT-s QPI/135W, DDR3-1600, HT, Turbo2-4/4/4/5/5/7/7/9)

Intel® Xeon® E5-2680 (2.70GHz/8-core/20MB/8GT-s QPI/130W, DDR3-1600, HT, Turbo2-4/4/5/5/5/7/8/8)

Intel® Xeon® E5-2670 (2.60GHz/8-core/20MB/8GT-s QPI/115W, DDR3-1600, HT, Turbo2-4/4/5/5/6/6/7/7)

Intel® Xeon® E5-2667 (2.90GHz/6-core/15MB/8GT-s QPI/130W, DDR3-1600, HT, Turbo2-3/3/3/4/5/6)

Intel® Xeon® E5-2665 (2.40GHz/8-core/20MB/8GT-s QPI/115W, DDR3-1600, HT, Turbo2-4/4/5/5/6/6/7/7)

Intel® Xeon® E5-2660 (2.20GHz/8-core/20MB/8GT-s QPI/95W, DDR3-1600, HT, Turbo2-5/5/6/6/7/7/8/8)

Intel® Xeon® E5-2650 (2.0GHz/8-core/20MB/8GT-s QPI/95W, DDR3-1600, HT, Turbo2-4/4/5/5/5/7/8/8)

Intel® Xeon® E5-2650L (1.80GHz/8-core/20MB/8.0 GT-s QPI/70W, DDR3-1600, HT, Turbo2-2/2/3/3/4/4/5/5)

Intel® Xeon® E5-2643 (3.33GHz/4-core/10MB/8GT-s QPI/130W, DDR3-1600, HT, Turbo2-1/1/2/2)

Intel® Xeon® E5-2637 (3.0GHz/2-core/5MB/8.0GT-s QPI/80W, DDR3-1600, HT, Turbo2- 2/2)

NOTE: HT indicates that the processor model supports Intel® /Hyper-Threading Technology
NOTE: Turbo 2 indicates the maximum potential bin increments when using Intel® Turbo Boost Technology, with 8, 7, 6 ,5, 4, 3, 2 and 1 cores active
NOTE: DDR3 speed is the maximum memory speed of the processor. Actual memory speed may depend on the quantity and type of DIMMs installed (options for 1600, 1333, 1066MHz).
NOTE: Up to 2 processors supported. Mixing different processor models is not supported.
NOTE: For the Intel® C600 Chipset E5-2600 Series, the letter preceding the model number indicates the Product Line (E3, E5, E7); 2600x v#, 2 = number of CPUs in a Node, 6 is socket/segment designation, 00 = Processor SKU, x = L for low power SKUs and v# (not yet designated) = version

number.

Cache Memory One of the following depending on Model	20MB (1x20MB) Level 3 NOTE: For Eight-core processors. 15MB (1x15MB) Level 3 NOTE: For Six-core processors. 10MB (1x10MB) Level 3 NOTE: For Quad-core processors. 5MB (1x5MB) Level 3 NOTE: For Dual-core processors. NOTE: All processor models above list the L3 Cache associated with that particular processor.
Chipset	Intel® C600 Series Chipset Intel® E5-2600 Processor Family NOTE: For more information regarding Intel® chipsets, please see the following URL: http://www.intel.com/products/server/chipsets/.
Upgradeability	Upgradeable to two processors (16 Cores) Up to 24 DIMM slots available for higher Memory capacity Up to 8 SFF Hard Drive Bays; Or 4 LFF Drive Bay (optional through CTO below) FlexibleLOM slot for 1/10/40 Gigabit Ethernet or QDR/FDR InfiniBand networking options 2 PCIe 3.0 I/O slots for additional communications and storage expansion Redundant Power Supply Optical Drive Bay (8 SFF/4 LFF)
On System Management Processor	HP iLO (Firmware: HP iLO 4) NOTE: For more information, visit: http://www.hp.com/go/ilo.
Memory Protection	Advanced ECC Online Spare Lock-step

Standard Features

Memory One of the following depending on Model	Type	HP SmartMemory DDR3 Load Reduced(LRDIMM), Registered (RDIMM) or Unbuffered (UDIMM)
	DIMM Slots Available	24 (12 DIMM slots per processor /4 channels per processor/3 DIMMs per channel)
	Standard (Entry Model)	4GB using 1 x 4GB Registered DIMMs PC3-10600R (1333MHz)
	Standard (Base Models)	16GB using 4 x 4GB Registered DIMMs PC3-10600R (1333MHz)
	Standard (High Performance Models)	32GB using 4 x 8GB Registered DIMMs PC3-12800R (1600MHz)
	Standard (Energy Star Models)	Energy Star models duplicate Entry and Base models but add a second processor and on the Entry model double the memory to evenly distribute memory across dual processors
	Maximum Capacity (LRDIMM)	768GB (24 slots x 32GB@1066MHz)
	Maximum Performance Capacity (RDIMM)	256GB (16 slots x 16GB@1600MHz)
	Maximum Performance Capacity (UDIMM)	128GB (16 slots x 8GB@1333MHz)

NOTE: HP memory from previous generation servers are not qualified or warranted with this HP ProLiant Server. HP SmartMemory is required to realize the memory performance improvements and enhanced functionality listed in this document for Gen8. For additional information, please see the HP SmartMemory QuickSpecs at:
http://h18000.www1.hp.com/products/quickspecs/14225_na/14225_na.html
NOTE: LRDIMM, RDIMM and UDIMMs are all distinct memory technologies and cannot be mixed within a server. The majority of ProLiant Gen8 servers support RDIMM, UDIMM and LRDIMM.
NOTE: If only one processor is installed, only 12 DIMM slots are available. When populating with two processors 24 DIMM slots are available. For maximum speed on some memory options on 16 DIMM slots may be populated.
NOTE: Depending on the memory configuration and processor model, the memory speed may run at 1600MHz, 1333MHz, or 1066MHz. Please see Memory Population Table or the Online Memory Configuration Tool at: www.hp.com/go/ddr3memory-configurator.

Network Controller One of the following depending on Model	HP ProLiant Gen8 servers offer a new networking technology - Flexible Network Technology. The HP ProLiant DL360p Gen8 server offers the customer the choice of 1 Gigabit and/or 10 Gigabit networking solutions. For additional details see the Networking Section of this document.	
	Entry Models	HP Ethernet 1Gb 4-port 331FLR Adapter
	Base Models	HP Ethernet 1Gb 4-port 331FLR Adapter
	High Performance Models	HP Ethernet 10Gb 2-port 530FLR-SFP+ Adapter HP Ethernet 1Gb 4-port 331FLR Adapter
	Energy Star Certified Models	HP Ethernet 1Gb 4-port 331FLR Adapter

Standard Features

Expansion Slots

Expansion Slots #	Technology	Bus Width*	Connector Width	Form Factor	Notes
1	PCIe 3.0	x8	x8	Low profile slot	
2	PCIe 3.0	x16	x16	Half-length, full-height slot	

*Indicates the number of physical electrical lanes running to the connector.
NOTE: Two PCIe 3.0 expansion slots: (1) Half-length, full-height slot and (1) low-profile slot.

HP Server ROM

HP ROM (Read Only Memory) is now digitally signed using HP's Corporate Signing Service. This signature is verified before the flash process starts, reducing accidental programming and preventing malicious efforts to corrupt system ROM.

HP ROM provides for essential initialization and validation of hardware components before control is passed to the customer-installed operating system. The ROM also provides the capability of booting from various fixed media (HDD, CD-ROM) and removable media (USB), to continue operation to the operating system.

HP ROM performs very early configuration of the video controller, to allow monitoring of initialization progress via an attached monitor. If configuration or hardware errors are discovered during this early phase of hardware initialization, suitable messages are now displayed on the connected monitor. Additionally, these configuration or hardware errors are logged to the Integrated Management Log (IML) to assist in diagnosis.

HP's ProLiant ROM is used to configure the following:

- Processor and chipset status registers
- System memory, memory map, and memory initialization
- System hardware configuration (Integrated PCI devices and optional PCIe cards).
- Customer-specific BIOS configuration (using the HP ROM-Based Setup Utility (RBSU).

NOTE: For further information, please refer to HP's RBSU (ROM based setup utility) user guide: www.hp.com/support/rbsu.

Storage Controller
One of the following depending on Model

Entry Models	HP Smart Array P420i/ZM (RAID 0/1/1+0)
Base Models	HP Smart Array P420i/1GB with FBWC (RAID 0/1/1+0/5/5+0)
High Performance Models	HP Smart Array P420i/2GB with FBWC (RAID 0/1/1+0/5/5+0)
Energy Star - Base and Entry Models	HP Smart Array P420i/1GB FBWC (RAID 0/1/1+0/5/5+0) HP Smart Array P420i/ZM (RAID 0/1/1+0)

Standard Features

Internal Storage Devices	Diskette Drive	None
	Optical Drive	Optional DVD-ROM, DVD-RW NOTE: This option available with all 8SFF or 4LFF drive bay models.
	Hard Drives	None ship standard
	Hard Drive Bays	8 SFF drive bays total with Optical drive bay Optional: 4 LFF bays with Optical drive bay. NOTE: HP ProLiant DL360p Series servers offer both SFF, and LFF versions in CTO. The Optical Drive bay is available with both models. NOTE: LFF versions is not an upgradeable option from SFF models, or vice versa.

Maximum Internal Storage	Hot Plug SFF SAS	8.0TB	8 x 1TB
	Hot Plug SFF SATA	8.0TB	8 x 1TB
	Hot Plug LFF SAS	12.0TB	4 x 3TB (with optional LFF drive cage)
	Hot Plug LFF SATA	12.0TB	4 x 3TB (with optional LFF drive cage)
	Hot Plug SFF SAS SSD	6.4TB	8 x 800GB
	Hot Plug SFF SATA SSD	3.2TB	8 x 400GB
	Hot Plug LFF SATA SSD	1.6TB	4 x 400GB (with optional LFF drive cage)

Interfaces	Serial	1
	Video	1 Front Mini-Video connector/ 1- Rear standard video (not active simultaneously) NOTE: Mini-video connector requires Front Video Adapter Kit (PN 655915-B21).
	FlexibleLOM Network Ports	Some models come standard with 4 x 1GB ports while others come with 2 x 10GB ports (See HP Networking section below for more details and options).
	iLO remote management network port	1GB Dedicated
	SD slot	1 Internal secure
	USB 2.0 Ports	7 total: 4 rear, 2 front, 1 internal (secure)

Industry Standard Compliance

ACPI 2.0b Compliant
PCIe 3.0 Compliant
PXE Support
WOL Support
Microsoft® Logo certifications
USB 2.0 Compliant

Standard Features

Server Power Cords

All Pre-configured Models servers ship with a high voltage server to PDU power cord.
NOTE: HP ProLiant DL servers no longer ship standard with a 12-foot NEMA 5-15P to C13 power cords that allow connection to 110V US wall outlets in a home or office. ProLiant DL servers are primarily connected to PDU's in data center racks so they now ship standard with only a PDU 6-foot C-14 to C13 power cord (142263-001). If a user wishes to power a ProLiant DL server using a110V receptacle (NEMA-15), the 12-foot NEMA 5-15 to C13 power cord. See Power Cords section for Power Cord options.

Power Specifications

To review typical system power ratings use the HP Power Advisor which is available via the online tool located at URL: www.hp.com/go/proliant-energy-efficient or www.hp.com/go/hppoweradvisor.

NOTE: Power Specification and Technical Content for supported power supplies can be found at: http://h18000.www1.hp.com/products/quickspecs/14209_na/14209_na.html

Common Slot Power Supply

HP's Common Slot (CS) power supplies allow for commonality of power supplies across a wide range of ProLiant and Integrity servers, as well as HP Storage solutions, and are designed to provide the highest power supply efficiency without degrading system performance. HP CS power supplies are tested by the Electric Power Research Institute (EPRI) and certified through the ECOS 80 Plus power supply program. HP CS power supply options provide efficiency ratings of up to 94% (80 Plus Platinum) and are available in three power output options - 460W, 750W, and 1200W - allowing the customer to "right-size" a power supply for their specific server configuration. All HP Common Slot power sources are UL, CE Mark Compliant, hot-plug and support redundant configurations.

NOTE: Mixing of power supplies in the same server is not supported. All power supplies must be of the same output and efficiency rating. If non-matched power supplies are inserted you will get errors and operation will fail.

HP CS Platinum Plus power supplies are required when enabling HP's Intelligent Power Discovery (IPD) solution. IPD is the first technology to create an automated, energy-aware network between IT systems and facilities. This allows your company to reclaim millions of dollars in wasted power capacity and downtime costs across data centers. For more information on HP's IPD solution, go to www.hp.com/go/ipd.

It is highly recommended that you use the HP Power Advisor in defining the "Right-Size" power supply for your needs. HP Power Advisor can be accessed at: www.hp.com/go/hppoweradvisor.

NOTE: The 80 PLUS program is a unique forum that unites electric utilities, the computer industry, and consumers in an effort to bring energy efficient technology solutions to the marketplace. 80 Plus independently tests power supply efficiency and publicly posts the results on 80Plus.org.

Redundant Power: Optional (1+ 1 or n+n redundant) power supplies can be purchased through power supply option kits (see Power Supplies for part numbers).

NOTE: Power Specification and Technical Content for supported power supplies can be found at: http://h18000.www1.hp.com/products/quickspecs/14209_na/14209_na.html

Standard Features

System Fans One of the following depending on Model	6 fan modules ship standard in 1 processor models 8 fan modules ship standard in 2 processor models Fan redundancy is built in with independent dual rotor fan mechanisms in the Fan Module. (Two rotor failures could provide warning and eminent server shutdown) NOTE: The processor option kit contains 2 additional fan modules, when upgrading from a 1 processor to two processor models.
Required Cabling	For required cabling information, refer to the Web site at: www.hp.com/servers/dl360p-gen8
Operating Systems and Virtualization Software Support for ProLiant Servers	Microsoft Windows Server Red Hat Enterprise Linux (RHEL) SUSE Linux Enterprise Server (SLES) Oracle Solaris VMware Citrix XenServer NOTE: For more information on HP's Certified and Supported ProLiant Servers for OS and Virtualization Software and latest listing of software drivers available for your server including how to purchase from HP, please visit our OS Support Site at: http://www.hp.com/go/ossupport.
Graphics	Integrated Matrox G200 video standard • 1280 x 1024 (32 bpp) • 1920 x 1200 (16 bpp) NOTE: For more information, visit: http://www.hp.com/go/ilo.
Form Factor One of the following depending on Model	1U Rack form factor 8 SFF Drive Bay Version: 1.7" (4.32cm) Height x 17.11" (43.47cm) Width x 27.5" (69.85cm) Length 4 LFF Drive Bay Version: 1.7" (4.32cm) Height x 17.11" (43.47cm) Width x 29.5" (74.67cm) Length

Standard Features

On System Management	HP iLO Management Engine	HP iLO Management Engine is a complete set of embedded management features supporting the complete lifecycle of the server, from initial deployment, through ongoing management, to service alerting and remote support. HP iLO Management Engine comes standard on all HP ProLiant Gen8 Servers. HP iLO Management Engine portfolio includes: • HP iLO: The HP iLO management processor is the core foundation for HP iLO Management Engine. HP iLO for HP ProLiant servers simplify server setup, engage health monitoring, power and thermal control, and promote remote administration for HP ProLiant ML, DL, BL and SL servers. Furthermore with the new HP iLO is the ability to access, deploy, and manage your server anytime from anywhere with your Smartphone device. • HP Agentless Management: With HP iLO Management Engine in every HP ProLiant Gen8 server, the base hardware monitoring and alerting capability is built into the system (running on the HP iLO chipset) and starts working the moment that a power cord and an Ethernet cable is connected to the server. • HP Active Health System: HP Active Health System is an essential component of the HP iLO Management Engine. It provides: Diagnostics tools/scanners wrapped into one; Always on, continuous monitoring for increased stability and shorter downtimes; Rich configuration history; Health and service alerts; Easy export and upload to Service and Support. • HP Intelligent Provisioning (previously known as SmartStart): HP Intelligent Provisioning offers the ability for out-of-the box single-server deployment and configuration without the need for media. NOTE: For more information, visit: http://www.hp.com/go/ilo
HP Insight management software	HP Service Pack for ProLiant (SPP)	HP Service Pack for ProLiant (SPP) and HP Smart Update Manager (HP SUM) version 5 provide a new, comprehensive approach to firmware and system software maintenance. Together they provide better operating stability and ensure maximum uptime. The SPP will be updated at a predictable cadence, typically coinciding with new HP server hardware launches. By enabling all firmware to be updated online and integrating firmware and system software updates in one operation HP SUM and the SPP offer faster updates of individual servers and dramatically faster updates of entire BladeSystem enclosures. Further improving system uptime and stability is the fact that HP provides 12 months of support on each Service Pack for ProLiant. The user experience around HP SUM and the SPP has been improved in several ways, starting with the web download. A single web page provides access to a single download containing both the latest version of HP SUM version 5 and the latest SPP. Optional smaller subsets with only specific types of servers or specific operating systems are offered to save on download time. The HP SUM application has been re-written to provide a more straightforward, intuitive user interface that guides the user through the steps of discovery, analyses and update, providing comprehensive information on available updates, criticality and interdependencies. This information is also available in reports. By providing the option of multiple local or shared

repositories which can be easily updated from hp.com, HP SUM provides the tools to optimize stability and consistency throughout the company. While HP SUM and the SPP will recommend the combinations of firmware and system software that HP has found to be the best practice, the application gives customers the flexibility to set their own specific baseline.

The Service Pack for ProLiant has been rigorously tested with specific attention for interaction between firmware, drivers and agents both within the server as well as in interaction with the BladeSystem enclosure components (Onboard Administrator and Virtual Connect). This testing ensures the highest quality as well as providing the input for HP SUM to deploy updates taking into account all interdependencies, when determining the correct updates and order of update deployment.

NOTE: The Service Pack for ProLiant (which includes HP SUM 5) can be downloaded from www.hp.com/go/spp/download. More information can be found: www.hp.com/go/spp and http://www.hp.com/go/hpsum

Security	Power-on password Serial interface control Administrator's password

Warranty	This product is covered by a global limited warranty and supported by HP Services and a worldwide network of HP Authorized Channel Partners resellers. Hardware diagnostic support and repair is available for three years from date of purchase. Support for software and initial setup is available for 90 days from date of purchase. Enhancements to warranty services are available through HP Care Pack services or customized service agreements. Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details. NOTE: Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response. Warranty repairs may be accomplished through the use of Customer Self Repair (CSR) parts. These parts fall into two categories: 1) Mandatory CSR parts are designed for easy replacement. A travel and labor charge will result when customers decline to replace a Mandatory CSR part; 2) Optional CSR parts are also designed for easy replacement but may involve added complexity. Customers may choose to have HP replace Optional CSR parts at no charge. Additional information regarding worldwide limited warranty and technical support is available at: http://h18004.www1.hp.com/products/servers/platforms/warranty/index.html

Optional Features

HP Insight management software	HP Insight Control	HP Insight Control, a product option, delivers essential infrastructure management that can help save time and money by making it easy to deploy, migrate, monitor, remote control, and optimize your IT infrastructure through a single, simple management console. Two versions of Insight Control are available, to serve environments requiring either a Linux-based or a Windows-based central management server: HP Insight Control for Linux, and HP Insight Control. See www.hp.com/go/insightcontrol HP Insight Control includes one year of 24 x 7 HP Software Technical Support and Update Service ensuring rapid access to HP support staff and proactive delivery of software updates. For more information about this service, please visit: http://www.hp.com/services/insight.
	HP Matrix Operating Environment	The HP Matrix Operating Environment (Matrix OE) for ProLiant and Integrity servers is an integrated command center that helps you instantly adjust to dynamic business demands. This advanced infrastructure management software lets you reduce the cost of common data center tasks by up to 40 percent while keeping pace with your changing business. The HP Matrix OE includes the automated provisioning, optimization, and recovery management capabilities for HP CloudSystem Matrix, the ideal platform for private cloud and Infrastructure as a Service (IaaS). NOTE: For more information, visit: http://www.hp.com/go/matrixoe
	HP iLO Advanced License for ProLiant Servers	HP iLO management processors for HP ProLiant Gen8 servers virtualizes system controls to help simplify server setup, engage health monitoring and power and thermal control, and promote remote administration. HP iLO functions out-of-the-box without additional software installation and functions regardless of the servers' state of operation. Basic system board management functions, diagnostics, and essential Lights-Out functionality ships standard across all HP ProLiant Gen8 rack, tower and blade servers. The HP iLO can be accessed from any location via a web browser and works hand-in-hand with HP Systems Insight Manager, Insight Control, and HP Matrix Operating Environment, helping customers unleash the value of the ProLiant platform and deliver the highest possible quality of IT service to the business. Advanced functionality, such as graphical remote console, multi-user collaboration, and video record/playback can be activated with the optional HP iLO Advanced or HP iLO Advanced for BladeSystem licenses. The Advanced licensed features offer sophisticated remote administration of servers in dynamic data center and remote locations and can help significantly reduce cost associated with IT-related travel and unplanned downtime. NOTE: For more information, visit: http://www.hp.com/go/ilo

Optional Features

High Performance Clusters	HP Cluster Platforms	HP Cluster Platforms are specifically engineered, factory-integrated large-scale ProLiant clusters optimized for High Performance Computing, with a choice of servers, networks and software. Operating system options include specially priced offerings for Red Hat Enterprise Linux and SUSE Linux Enterprise Server, as well as Microsoft Windows HPC Server. A Cluster Platform Configurator simplifies ordering. http://www.hp.com/go/clusters.
	HP HPC Interconnects	High Performance Computing (HPC) interconnect technologies are available for this server as part of the HP Cluster Platform portfolio. These high-speed InfiniBand and Gigabit interconnects are fully supported by HP when integrated within an HP cluster. Flexible, validated solutions can be defined with the help of configuration tools. http://www.hp.com/techservers/clusters/ucp/index.html
	HP Insight Cluster Management Utility	HP Insight Cluster Management Utility (CMU) is an HP-licensed and HP-supported suite of tools that are used for lifecycle management of hyperscale clusters of Linux ProLiant systems. CMU includes software for the centralized provisioning, management and monitoring of nodes. CMU makes the administration of clusters user friendly, efficient, and effective. http://www.hp.com/go/cmu
	HP HPC Linux Value Pack	HP HPC Linux Value Pack (Value Pack) is an HP-licensed and HP-supported option to HP Insight CMU, for the development and deployment of applications on HPC Cluster Platforms. Value Pack includes the Platform LSF workload scheduler and Platform Application Center, as well as the HP-MPI parallelization library. HP HPC Linux Value Pack

HP Insight Online

HP Insight Online is a new addition to the HP Support Center for one stop, secure access to product and HP support information personalized to your IT environment. Insight Online can automatically display devices remotely monitored by HP Insight Remote Support. With Insight Online's easy navigation you can efficiently track your IT support contracts and device status from anywhere and at anytime. www.hp.com/go/insightonline

Factory Express Portfolio for Servers and Storage

HP Factory Express offers configuration, customization, integration and deployment services for HP servers and storage products. Customers can choose how their factory solutions are built, tested, integrated, shipped and deployed.

Factory Express offers service packages for simple configuration, racking, installation, complex configuration and design services as well as individual factory services, such as image loading, asset tagging, and custom packaging. HP products supported through Factory Express include a wide array of servers and storage: HP Integrity, HP ProLiant, HP ProLiant Server Blades, HP BladeSystem, HP 9000 servers as well as the MSAxxxx, VA7xxx, EVA, XP, rackable tape libraries and configurable network switches.

For more information on Factory Express services for your specific server model please contact your sales representative or go to: http://www.hp.com/go/factory-express.

HP Enterprise Configurator

The HP eConfigure-Enterprise Configurator now provides factory default racking for our HP hardware portfolio. This approach is aligned with our strategic direction to meet the needs and expectations of our valued customers. If you require "custom" rack configuration, please contact HP's Customer Business Center or an Authorized Partner for assistance. http://www.hp.com/products/configurator.

Service and Support

HP Technology Services for Industry Standard Servers and BladeSystem
Capitalizing on HP ProLiant server and HP BladeSystem capabilities requires a service partner who understands your increasingly complex business technology environment. That's why it makes sense to team up with the people who know HP infrastructure hardware and software best - the experienced professionals at HP Services.

What HP ProLiant and BladeSystem Services can do for you
HP ProLiant and BladeSystem Services can help you design, deploy, test, integrate, support, and manage IT and infrastructure solutions. This way, HP proposes services solutions that include more than just uplift of base warranty. Foundation Care services deliver scalable support-packages for HP industry-standard servers and software. You can choose the type and level of service that is most suitable for their business needs. New to this portfolio is HP Collaborative Support. If you are running business critical environments, HP offers Proactive Care or Critical Advantage. These services help deliver high levels of application availability through proactive service management and advanced technical response

You can get the support you need by choosing from one of a number of service packaged solutions we have designed to address wider set of customer support needs.

HP Technology Services meets business challenges with services offered in three support recommendations - Optimized Care, Standard Care, and Basic Care - available for each product group. Such support solutions enable customers to optimize technology operations, minimize risk and drive better business outcomes with easy-to-buy, easy-to-use scalable support recommendations for servers, storage, networking and software.

All three service recommendations include support services from the broader portfolio of Foundation Care and Proactive Care services.

Optimized Care

Optimized Care: Supports maintaining servers at optimum performance availability

HP ProLiant Server Hardware Installation
Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner
http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN.pdf

HP Installation and Startup for Insight Control Software / HP SIM
Provides for the deployment and basic configuration of HP Insight Control or HP SIM (Systems Insight Manager) on HP ProLiant ML and DL series servers or HP BladeSystem servers
http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA0-9972ENW.pdf

3-Year HP 24x7 4 hour Response, Proactive Care or Critical Advantage
Helps optimize your systems and delivers high levels of application availability through proactive service management and advanced technical response. A skilled Technical Manager will own your query or issue end to end until resolved, delivering a single point of contact for you
http://h20195.www2.hp.com/V2/GetPDF.aspx/4AA3-2140ENW.pdf

Additional Services: Data Center Transformation Services

Service and Support

Standard Care	Standard Care: Service recommendation that maintains high level of server availability HP ProLiant Server Hardware Installation Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN.pdf HP Installation and Startup for Insight Control Software / HP SIM Provides for the deployment and basic configuration of HP Insight Control or HP SIM (Systems Insight Manager) on HP ProLiant ML and DL series servers or HP BladeSystem servers http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA0-9972ENW.pdf 3-Year HP 24x7 4 hour Response, Collaborative Support Offers customers a single point of contact for server problem diagnosis, hardware problem resolution, and basic software problem diagnosis, fault isolation, and resolution if available to HP. If the problem is with HP HW, the representative will arrive on site any time and day of the year to begin hardware maintenance service within 4 hours of the service request being logged. In case, the issue is with HP or supported third-party software product and cannot be resolved by applying known fixes, HP will contact the third-party vendor and create a problem incident on your behalf. Additional Services: Software OS (Microsoft, Linux (SUSE/Red Hat) & VMware) Installation & Start Up and Software Support; Microsoft or Linux or VMware education courses; +60 Proactive Select Credits
Basic Care	Basic Care: delivers minimum recommended support service level HP ProLiant Server Hardware Installation Provides for the basic hardware installation of HP branded servers, storage devices and networking options to assist you in bringing your new hardware into operation in a timely and professional manner http://h20195.www2.hp.com/V2/GetPDF.aspx/5981-9356EN.pdf 3-Year HP 24x7 4 hour Response, Hardware Support Onsite Service Provides for the deployment and basic configuration of HP Insight Control on HP ProLiant ML and DL series servers or HP BladeSystem servers http://h20195.www2.hp.com/v2/GetPDF.aspx/4AA0-9972ENW.pdf Additional Services: Software OS (Microsoft, Linux (SUSE/Red Hat) & VMware) Installation & Start Up and Software Support; +30 Proactive Select Credits, Factory Express.
Insight Remote Support	Provides 24 X 7 remote monitoring, proactive notifications, and problem resolution. Learn more http://www.hp.com/go/insightremotesupport

Service and Support

HP Support Center	Personalized online support portal with access to information, tools and experts to support HP business products. Submit support cases online, chat with HP experts, access support resources or collaborate with peers. Learn more http://www.hp.com/go/hpsc HP's Support Center Mobile App* allows you to resolve issues yourself or quickly connect to an agent for live support. Now, you can get access to personalized IT support anywhere, anytime. HP Insight Remote Support and HP Support Center are available at no additional cost with a HP warranty, HP Care Pack or HP contractual support agreement. *HP' Support Center Mobile App is subject to local availability
Warranty / Service Coverage	For ProLiant servers and storage systems, the services cover HP-branded hardware options qualified for the server, purchased at the same time or afterward, internal to the enclosure, as well as external monitors up to 22" and tower UPS products; these items will be covered at the same service level and for the same coverage period as the server unless the maximum supported lifetime and/or the maximum usage limitation has been exceeded. Coverage of the UPS battery is not included; standard warranty terms and conditions apply. The defective media retention service feature option applies only to Disk or eligible SSD/Flash Drives replaced by HP due to malfunction. It does not apply to any exchange of Disk or SSD/Flash Drives that have not failed. SSD/Flash Drives that are specified by HP as consumable parts and/or that have exceeded maximum supported lifetime and/or the maximum usage limit as set forth in the manufacturer's operating manual or the technical data sheet are not eligible for the defective media retention service feature option.
For more information	To learn more on HP ProLiant servers and HP BladeSystem servers, please contact your HP sales representative or HP Authorized Channel Partner. Or visit: http://www.hp.com/services/proliant

Pre-configured Models

NOTE: For the Standard Features shipped in the "Factory Integrated Models", please see the "Configuration Information - Factory Integrated Models" section.
NOTE: Pre-configured models ship with the configurations below. Options can be selected from the Core or Additional options section of this QuickSpecs.
NOTE: HP does not allow factory integration of options into pre-configured models. Any additional options purchased will be shipped separately.
NOTE: If you desire a custom configuration please see "Configuration Information - Factory Integrated Models" section of this QuickSpecs.

Entry Models

Quad-Core Model HP ProLiant DL360p Gen8 E5-2603 1P 4GB-R P420i SFF 460W PS Entry Server 646900-001	Processor(s)	(1) Intel® Xeon® E5-2603 (1.80GHz/4-core/10MB/6.4GT-s QPI/80W) Processor
	Cache Memory	10MB (1x10MB) L3 cache
	Memory	4GB (1 x 4GB DDR3-1333MHz RDIMMs) NOTE: 24 (12 DIMM slots per processor /4 channels per processor/3 DIMMs per channel).
	Network Controller	HP Ethernet 1Gb 4-port 331FLR Adapter
	Storage Controller	HP Smart Array P420i/ZM (RAID 0/1/1+0)
	Hard Drive	None ship standard
	Internal Storage	Standard: 8 SFF HDD Bays
	Optical Drive Bay	1 (Optional: DVD-ROM, DVD-RW)
	PCI-Express Slots	2 standard (1-FH/HL, 1-LP) PCIe 3.0
	Power Supply	(1) HP 460W Common Slot Gold Hot Plug Power Supply (92% Efficient)
	Fans	6 Hot Plug Redundant Fan Modules
	Management	iLO Management Engine Standard Optional: HP Insight Control
	Form Factor	Rack (1U) NOTE: Includes Rack Mounting Gen8 non-telescoping Friction Rail Kit which does not allow for in rack serviceability. The HP 1U Gen8 Cable Management Arm is not available when using Friction Rails. Caution: HP recommends that a minimum of two people is required for all Rack Server installations. Please refer to your installation instructions for proper tools and number of people to use for any installation.
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

Pre-configured Models

Base Models

Six-Core Models HP ProLiant DL360p Gen8 E5-2640 1P 16GB-R P420i SFF 460W PS Base Server 646902-001 HP ProLiant DL360p Gen8 E5-2630 1P 16GB-R P420i SFF 460W PS Base Server 646901-001	Processor(s) One of the following depending on Model	(1) Intel® Xeon® E5-2640 (2.50GHz/6-core/15MB/7.2GT-s QPI/95W, DDR3-1333, HT, Turbo2- 3/3/4/4/5/5) Processor (1) Intel® Xeon® E5-2630 (2.30GHz/6-core/15MB/7.2GT-s QPI/95W, DDR3-1333, HT, Turbo2- 3/3/4/4/5/5) Processor
	Cache Memory	15MB (1x15MB) L3 cache
	Memory	16GB (4 x 4GB DDR3-1333MHz RDIMMs) NOTE: 24 (12 DIMM slots per processor /4 channels per processor/3 DIMMs per channel).
	Network Controller	HP Ethernet 1Gb 4-port 331FLR Adapter
	Storage Controller	HP Smart Array P420i/1GB with FBWC (RAID 0/1/1+0/5/5+0)
	Hard Drive	None ship standard
	Internal Storage	Standard: 8 SFF HDD Bays
	Optical Drive Bay	1 (Optional: DVD-ROM, DVD-RW)
	PCI-Express Slots	2 standard (1-FH/HL, 1-LP) PCIe 3.0
	Power Supply	(1) HP 460W CS Platinum Plus Hot Plug Power Supply (94% Efficient)
	Fans	6 Hot Plug Redundant Fan Modules
	Management	iLO Management Engine Standard Optional: HP Insight Control
	Form Factor	Rack (1U) NOTE: Includes Rack Mounting Gen8 telescoping SFF Ball Bearing Rail Kit which does allow for in rack serviceability. Due to the size and weight of the server two people are required to insall the server into the rack. The HP 1U Gen8 Cable Management Arm is optional. To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative. Caution: HP recommends that a minimum of two people is required for all Rack Server installations. Please refer to your installation instructions for proper tools and number of people to use for any installation.
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response

Pre-configured Models

High Performance Models

NOTE: These Models are Energy Star Certified.

Eight-Core Models HP ProLiant DL360p Gen8 E5-2690 2P 32GB-R P420i SFF 750W PS Performance Server 646905-001	Processor(s) One of the following depending on Model	(2) Intel® Xeon® E5-2690 (2.90GHz/8-core/20MB/8GT-s QPI/135W, DDR3-1600, HT, Turbo2- 4/4/4/5/5/7/7/9) Processors (2) Intel® Xeon® E5-2650 (2.0GHz/8-core/20MB/8GT-s QPI/95W, DDR3-1600, HT, Turbo2- 4/4/5/5/5/7/8/8) Processors
	Cache Memory	20MB (1x20MB) L3 cache
	Memory	32GB (4 x 8GBDDR3-1600MHz RDIMMs) NOTE: 24 (12 DIMM slots per processor /4 channels per processor/3 DIMMs per channel).
HP ProLiant DL360p Gen8 E5-2650 2P 32GB-R P420i SFF 460W PS Performance Server 646904-001	Network Controller One of the following depending on Model	HP Ethernet 10Gb 2-port 530FLR-SFP+ Adapter (on E5-2690 Model) HP Ethernet 1Gb 4-port 331FLR Adapter (on E5-2650 Model)
	Storage Controller	HP Smart Array P420i/2GB with FBWC (RAID 0/1/1+0/5/5+0)
	Hard Drive	None ship standard
	Internal Storage	Standard: 8 SFF HDD Bays
	Optical Drive Bay	1; (Optional: DVD-ROM, DVD-RW)
	PCI-Express Slots	2 standard (1-FH/HL, 1-LP) PCIe 3.0
	Power Supply One of the following depending on Model	(2) HP 750W CS Platinum Plus Hot Plug Power Supplies (94% Efficient) (on E5-2690 Model) (2) HP 460W CS Platinum Plus Hot Plug Power Supplies (94% Efficient) (on E5-2650 Model)
	Fans	8 Hot Plug Redundant Fan Modules
	Management	iLO Management Engine Standard HP Insight Control Standard
	Energy Star	Meets Energy Star requirements
	Form Factor	Rack (1U) NOTE: Includes Rack Mounting Gen8 telescoping SFF Ball Bearing Rail Kit which does allow for in rack serviceability. Due to the size and weight of the server two people are required to insall the server into the rack. The HP 1U Gen8 Cable Management Arm is optional. To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative. Caution: HP recommends that a minimum of two people is required for all Rack Server installations. Please refer to your installation instructions for proper tools and number of people to use for any installation.
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response

Pre-configured Models

Energy Star - Base and Entry Models

NOTE: These Models are Energy Star Certified.

Six-Core Model HP ProLiant DL360p Gen8 E5-2630 2P 16GB-R P420i SFF 460W PS Energy Star Server 677199-001	Processor(s) One of the following depending on Model	(2) Intel® Xeon® E5-2630 (2.30GHz/6-core/15MB/7.2GT-s QPI/95W, DDR3-1333, HT, Turbo2- 3/3/4/4/5/5) Processors (2) Intel® Xeon® E5-2603 (1.80GHz/4-core/10MB/6.4GT-s QPI/80W) Processors NOTE: All added memory only runs at 1066MHz speed.
	Cache Memory One of the following depending on Model	15MB (1x15MB) Level 3 cache 10MB (1x10MB) Level 3 cache
HP ProLiant DL360p Gen8 E5-2603 2P 8GB-R P420i SFF 460W PS Energy Star Server 677198-001	Memory	16GB (4 x 4GB DDR3-1333MHz RDIMMs) (on E5-2630 Model) 8GB (2 x 4GB DDR3-1333MHz RDIMMs) (on E5-2603 Model) NOTE: 24 (12 DIMM slots per processor /4 channels per processor/3 DIMMs per channel).
	Network Controller	HP Ethernet 1Gb 4-port 331FLR Adapter
	Storage Controller	HP Smart Array P420i/1GB with FBWC (RAID 0/1/1+0/5/5+0) (on E5-2630 Model) HP Smart Array P420i/ZM (RAID 0/1/1+0) (on E5-2603 Model)
	Hard Drive	None ship standard
	Internal Storage	Standard: 8 SFF HDD Bays
	Optical Drive Bay	1; (Optional:DVD-ROM, DVD-RW)
	PCI-Express Slots	2 standard(1-FH/HL, 1-LP) PCIe 3.0
	Power Supply	(1) HP 460W CS Platinum Plus Hot Plug Power Supply (94% Efficient)
	Fans	8 Hot Plug Redundant Fan Modules
	Management	iLO Management Engine Standard Optional: HP Insight Control
	Energy Star	Meets Energy Star requirements
	Form Factor	Rack (1U) NOTE: Includes Rack Mounting Gen8 telescoping SFF Ball Bearing Rail Kit which does allow for in rack serviceability. Due to the size and weight of the server two people are required to insall the server into the rack. The HP 1U Gen8 Cable Management Arm is optional. To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative. Caution: HP recommends that a minimum of two people is required for all Rack Server installations. Please refer to your installation instructions for proper tools and number of people to use for any installation.
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

Smart Buys

HP ProLiant DL360p Gen8 E5-2609 1P SFF Svr/S-Buy 670632-S01	Processor	Intel® Xeon® E5-2609 (2.40GHz/4-core/10MB/6.4GT-s QPI/80W)
	Cache Memory	10MB (1x10MB) Level 3
	Memory	8GB (1 x 8GB DDR3-1333MHz Low Voltage RDIMMs)
	Network Controller	HP FlexLOM 1Gb 4-port 331FLR Ethernet Adapter
	Storage Controller	HP Smart Array P420i/ZM (RAID 0/1/1+0)
	Hard Drive	None ship standard
	Internal Storage	Standard: 8 SFF HDD Bays
	Optical Drive Bay	1 (Optional: DVD-ROM, DVD-RW)
	PCI-Express Slots	2 standard (1-FH/HL, 1-LP) PCIe 3.0
	Power Supply	(2) HP 460W CS Platinum Plus Hot Plug Redundant Power Supplies
	Fans	6 Hot Plug Redundant Fans
	Management	iLO Management Engine Standard
	Form Factor	Rack (1U)
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

HP ProLiant DL360p Gen8 E5-2620 1P SFF Svr/S-Buy 670633-S01	Processor	Intel® Xeon® E5-2620 (2.0GHz/6-core/15MB/7.2GT-s QPI/95W, DDR3-1333, HT, Turbo2- 3/3/4/4/5/5)
	Cache Memory	15MB (1x15MB) Level 3
	Memory	16GB (2 x 8GB DDR3-1333MHz Low Voltage RDIMMs)
	Network Controller	HP FlexLOM 1Gb 4-port 331FLR Ethernet Adapter
	Storage Controller	HP Smart Array P420i/ZM (RAID 0/1/1+0)
	Hard Drive	None ship standard
	Internal Storage	Standard: 8 SFF HDD Bays
	Optical Drive Bay	1 (Optional: DVD-ROM, DVD-RW)
	PCI-Express Slots	2 standard (1-FH/HL, 1-LP) PCIe 3.0
	Power Supply	(2) HP 460W CS Platinum Plus Hot Plug Redundant Power Supplies
	Fans	6 Hot Plug Redundant Fans
	Management	iLO Management Engine Standard
	Form Factor	Rack (1U)
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

Smart Buys

HP ProLiant DL360p Gen8 E5-2640 2P SFF Svr/S-Buy 670634-S01	Processor	(2) Intel® Xeon® E5-2640 (2.50GHz/6-core/15MB/7.2GT-s QPI/95W, DDR3-1333, HT, Turbo2- 3/3/4/4/5/5)
	Cache Memory	15MB (1x15MB) Level 3
	Memory	16GB (2 x 8GB DDR3-1333MHz Low Voltage RDIMMs)
	Network Controller	HP FlexLOM 1Gb 4-port 331FLR Ethernet Adapter
	Storage Controller	HP Smart Array P420i/1GB with FBWC (RAID 0/1/1+0/5/5+0)
	Hard Drive	None ship standard
	Internal Storage	Standard: 8 SFF HDD Bays
	Optical Drive Bay	1 (Optional: DVD-ROM, DVD-RW)
	PCI-Express Slots	2 standard (1-FH/HL, 1-LP) PCIe 3.0
	Power Supply	(2) HP 460W CS Platinum Plus Hot Plug Redundant Power Supplies
	Fans	8 Hot Plug Redundant Fans
	Management	iLO Management Engine Standard
	Form Factor	Rack (1U)
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

HP ProLiant DL360p Gen8 E5-2660 2P SFF Svr/S-Buy 670635-S01	Processor	(2) Intel® Xeon® E5-2660 (2.20GHz/8-core/20MB/8GT-s QPI/95W, DDR3-1600, HT, Turbo2- 5/5/6/6/7/7/8/8)
	Cache Memory	20MB (1x20MB) Level 3
	Memory	32GB (4 x 8GB DDR3-1333MHz Low Voltage RDIMMs)
	Network Controller	HP FlexLOM 1Gb 4-port 331FLR Ethernet Adapter
	Storage Controller	HP Smart Array P420i/1GB with FBWC (RAID 0/1/1+0/5/5+0)
	Hard Drive	None ship standard
	Internal Storage	Standard: 8 SFF HDD Bays
	Optical Drive Bay	1 (Optional: DVD-ROM, DVD-RW)
	PCI-Express Slots	2 standard (1-FH/HL, 1-LP) PCIe 3.0
	Power Supply	(2) HP 460W CS Platinum Plus Hot Plug Redundant Power Supplies
	Fans	8 Hot Plug Redundant Fans
	Management	iLO Management Engine Standard
	Form Factor	Rack (1U)
	Warranty	Server Warranty includes 3-Year Parts, 3-Year Labor, 3-Year Onsite support with next business day response.

NOTE: This section lists some of the steps required to configure a Factory Integrated Model. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for information on configurable product offerings and requirements.
NOTE: Configure-to-order (CTO) servers must start with a CTO Chassis.
NOTE: FIO indicates that this option is only available as a factory installable option.

Step 1: Base Configuration (choose one of the following configurable models)

HP Models

HP ProLiant DL360p Gen8 8 SFF Configure-to-order Server 654081-B21

Factory Integrated Model ships with:

2 x HP Smart Socket Guides for fast processor installation
Drive Cage - 8-Small Form Factor
24 DIMM slots for RDIMM, LRDIMM and UDIMM SmartMemory installation
(1) FlexibleLOM connection point: (see Step2: HP FlexibleLOM NIC section below for NIC choices to populate the embedded connector)
Smart Array P420i Controller (Cache connection for 512MB, 1GB and 2GB FBWC options)
I/O slots - 2 Slots come standard:

- Slot 1 - Full-Height/Half-Length x 16 PCIe 3.0
- Slot 2 - Low Profile x 8 PCIe 3.0

System Fans - 6 (2 additional fans included with second processor)
USB - 4 Rear, 2 Front, 1 Internal
1 Internal SD slot
On System Server Management Processor - HP iLO 4 (embedded)
SID - System Insight Display(Active Health Indicator)
Power Supply not included - choose from Power Options section
NOTE: With new options available for Networking solutions and Rack Rail Kits these options are no longer standard on-board with this Model Part Number. Please see the Networking and HP Rack Options below for optional required options.

HP ProLiant DL360p Gen8 4 LFF Configure-to-order Server 655651-B21

Factory Integrated Model ships with:

2 x HP Smart Socket Guides for fast processor installation
Drive Cage - 4-Large Form Factor
24 DIMM slots for RDIMM, LRDIMM and UDIMM SmartMemory installation
(1) FlexibleLOM connection point: (see Step2: HP FlexibleLOM NIC section below for NIC choices to populate the embedded connector)
Smart Array P420i Controller (Cache connection for 512MB, 1GB and 2GB FBWC options)
I/O slots - 2 Slots come standard:

- Slot 1 - Full-Height/Half-Length x 16 PCIe 3.0
- Slot 2 - Low Profile x 8 PCIe 3.0

System Fans - 6 (2 additional fans included with second processor)
USB - 4 Rear, 2 Front, 1 Internal
1 Internal SD slot
On System Server Management - (HP iLO Management Engine) (embedded)
SID - System Insight Display(Active Health Indicator)

Power Supply not included - choose from Power Options section

NOTE: With new options available for Networking solutions and Rack Rail Kits these options are no longer standard on-board with this Model Part Number. Please see the Networking and HP Rack Options below for optional required options.

Step 2: Choose Required Options (only one of the following from each list unless otherwise noted)

HP Processors

NOTE: If two processors are desired, select one xxxxxx-L21 and one xxxxxx-B21.

Entry Processors

NOTE: All support up to 1066MHz memory speeds.

HP DL360p Gen8 Intel® Xeon® E5-2609 (2.40GHz/4-core/10MB/80W) FIO Processor Kit	654766-L21
HP DL360p Gen8 Intel® Xeon® E5-2603 (1.80GHz/4-core/10MB/80W) FIO Processor Kit	654780-L21

Base Processors

NOTE: All support up to1333MHz DDR3 memory speeds.

HP DL360p Gen8 Intel® Xeon® E5-2640 (2.50GHz/6-core/15MB/95W) FIO Processor Kit	654770-L21
HP DL360p Gen8 Intel® Xeon® E5-2630 (2.30GHz/6-core/15MB/95W) FIO Processor Kit	654768-L21
HP DL360p Gen8 Intel® Xeon® E5-2620 (2.0GHz/6-core/15MB/95W) FIO Processor Kit	654782-L21
HP DL360p Gen8 Intel® Xeon® E5-2630L (2.0GHz/6-core/15MB/60W) FIO Processor Kit	654764-L21

Performance Processors

NOTE: All support up to 1600MHz DDR3 memory speeds.

HP DL360p Gen8 Intel® Xeon® E5-2690 (2.90GHz/8-core/20MB/135W) FIO Processor Kit	664011-L21
HP DL360p Gen8 Intel® Xeon® E5-2680 (2.70GHz/8-core/20MB/130W) FIO Processor Kit	654789-L21
HP DL360p Gen8 Intel® Xeon® E5-2670 (2.60GHz/8-core/20MB/115W) FIO Processor Kit	654786-L21
HP DL360p Gen8 Intel® Xeon® E5-2667 (2.90GHz/6-core/15MB/130W) FIO Processor Kit	654791-L21
HP DL360p Gen8 Intel® Xeon® E5-2665 (2.40GHz/8-core/20MB/115W) FIO Processor Kit	666029-L21
HP DL360p Gen8 Intel® Xeon® E5-2660 (2.20GHz/8-core/20MB/95W) FIO Processor Kit	654784-L21
HP DL360p Gen8 Intel® Xeon® E5-2650 (2.0GHz/8-core/20MB/95W) FIO Processor Kit	654772-L21
HP DL360p Gen8 Intel® Xeon® E5-2650L (1.80GHz/8-core/20MB/70W) FIO Processor Kit	654778-L21
HP DL360p Gen8 Intel® Xeon® E5-2643 (3.30GHz/4-core/10MB/130W) FIO Processor Kit	654774-L21

	HP DL360p Gen8 Intel® Xeon® E5-2637 (3.0GHz/2-core/5MB/80W) FIO Processor Kit	654776-L21
HP Memory	NOTE: HP memory from previous generation servers are not qualified or warranted with this HP ProLiant Server. HP SmartMemory is required to realize the memory performance improvements and enhanced functionality listed in this document for Gen8. For additional information, please see the HP SmartMemory QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/14225_na/14225_na.html NOTE: LRDIMM, RDIMM and UDIMMs are all distinct memory technologies and cannot be mixed within a server. The majority of ProLiant Gen8 servers support RDIMM, UDIMM and LRDIMM.	
	Registered DIMMs (RDIMMs)	
	HP 4GB (1x4GB) Single Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647893-B21
	HP 8GB (1x8GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647897-B21
	HP 16GB (1x16GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647901-B21
	HP 4GB (1x4GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647895-B21
	HP 8GB (1x8GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647899-B21
	HP 16GB (1x16GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	672631-B21
	Unbuffered with ECC DIMMs (UDIMMs)	
	HP 2GB (1x2GB) Single Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit	647905-B21
	HP 4GB (1x4GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit	647907-B21
	HP 8GB (1x8GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit	647909-B21
	Load Reduction DIMMs (LRDIMMs)	
	HP 32GB (1x32GB) Quad Rank x4 PC3L-10600L (DDR3-1333) Load Reduced CAS-9 Low Voltage Memory Kit	647903-B21
	NOTE: All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator. NOTE: Depending on the memory configuration and processor model, 1600MHz and 1333MHz memory may operate at a lower speed. Please see the see the "Memory" section later in this document and the Online Memory Configuration Tool for details at www.hp.com/go/ddr3memory-configurator. NOTE: For additional memory rules and guidelines, see the "Memory" section later in this document. NOTE: For more information on ProLiant Energy Efficient Features, see: www.hp.com/go/proliant-energy-efficient NOTE: PC3L is a low voltage memory. NOTE: Intel E5 E5-2620 processor does not support LV DIMMs running at 1.35V. The HP RBSU can be changed to run at 1.5V. NOTE: Not all Intel E5 processor series support 1600MHz or 1333MHz speeds.	

	Memory speed is a function of the processor QPI speed.	
HP Networking	FlexibleLOM Adapters NOTE: The HP ProLiant DL360p Gen8 server requires one FlexibleLOM to be installed in the FlexibleLOM slot. The choice is one of the from the "HP Networking" or "HP InfiniBand" sections.	
	HP 1GbE 4-port 331FLR Adapter FIO Kit	684208-B21
	HP 10GbE 2P 530FLR Adapter FIO Kit	684210-B21
	HP FlexFabric 10Gb 2-port 554FLR-SFP+ FIO Adapter	684213-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: www.hp.com/go/ProLiantNICs.	
HP InfiniBand	HP InfiniBand FDR/EN 10/40Gb Dual Port 544FLR-QSFP Adapter	649282-B21
	HP InfiniBand QDR/EN 10Gb Dual Port 544FLR-QSFP Adapter	649283-B21
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/13078_na/13078_na.html	
HP Power Supplies	NOTE: Prior to making a power supply selection it is highly recommended that the HP Power Advisor is run to determine the right size power supply for your server configuration. The HP Power Advisor is located at: www.hp.com/go/hppoweradvisor.	
	HP Common Slot Platinum Plus Power Supply Kits NOTE: The following Power Supplies offer 94% Efficiency with Intelligent Power Discovery.	
	HP 460W Common Slot Platinum Plus Hot Plug Power Supply Kit	656362-B21
	HP 750W Common Slot Platinum Plus Hot Plug Power Supply Kit	656363-B21
	HP 1200W Common Slot Platinum Plus Hot Plug Power Supply Kit	656364-B21
	HP Common Slot Gold Power Supplies NOTE: The following Power Supplies offer 92% Efficiency.	
	HP 460W Common Slot Gold Hot Plug Power Supply Kit	503296-B21
	HP 750W Common Slot Gold Hot Plug Power Supply Kit	512327-B21
	HP Common Slot -48VDC Power Supplies NOTE: The following Power Supplies offer 92% Efficiency.	
	HP 750W Common Slot -48VDC Hot Plug Power Supply Kit NOTE: The HP 750W Common Slot -48VDC power supply has been designed with a terminal block connection allowing for custom design of power cords by the user. However, HP offers multiple cable options for this power supply which can found at www.hp.com/products/powercords.	636673-B21
	NOTE: Option Kits for AC power supplies include the power supply and one PDU IEC cable.	
	NOTE: Power Specification and Technical Content for supported power supplies can be found at: http://h18000.www1.hp.com/products/quickspecs/14209_na/14209_na.html	

Step 3: Choose Additional Factory Integratable Options

HP Rack Kits	HP 1U Friction Gen8 Rail FIO Kit NOTE: Kit contains non-telescoping friction rails which do not allow for in rack serviceability. The HP 1U Gen8 Cable Management Arm is not available when using Friction Rails. Caution: HP recommends that a minimum of two people is required for all Rack Server installations. Please refer to your installation instructions for proper tools and number of people to use for any installation.	663200-B21
	HP 1U Small Form Factor Ball Bearing Gen8 Rail Kit NOTE: For SFF models. NOTE: Kit contains telescoping SFF ball bearing rails which do allow for in rack serviceability. Due to the size and weight of the server two people are required to install the server into the rack. The HP 1U Gen8 Cable Management Arm is optional. To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative. Caution: HP recommends that a minimum of two people is required for all Rack Server installations. Please refer to your installation instructions for proper tools and number of people to use for any installation.	663201-B21
	HP 1U Large Form Factor Ball Bearing Gen8 Rail Kit NOTE: For LFF models. NOTE: Kit contains telescoping LFF ball bearing rails which do allow for in rack serviceability. Due to the size and weight of the server two people are required to install the server into the rack. The HP 1U Gen8 Cable Management Arm is optional. To assist in the installation of the server into the rack an optional installation tool is available by contacting your local services representative. Caution: HP recommends that a minimum of two people is required for all Rack Server installations. Please refer to your installation instructions for proper tools and number of people to use for any installation.	663202-B21
	HP 1U Gen8 Management Arm Cable NOTE: supports Ball Bearing rail kits only	663203-B21
HP Insight Software	HP Insight Control including 1yr 24x7 Support ProLiant ML/DL/BL-bundle Single Server FIO License	582765-B21
	HP Insight Control for Linux including 1yr 24x7 Support ML/DL Bundle 1 Server FIO License	TC203A

Step 4: Choose Additional Options for Factory Integration

NOTE: For additional options, please refer to the "Core Options" and "Additional Options" section below.

NOTE: Some options may not be integrated at the factory. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for additional information.

HP Unique Options	HP DL360pGen8 Front Video Adapter Kit	655915-B21
HP Processors	**Entry Processors**	
	NOTE: All Entry Processors support up to 1600MHz DDR3 memory speed.	
	HP DL360p Gen8 Intel® Xeon® E5-2609 (2.40GHz/4-core/10MB/80W) Processor Kit	654766-B21
	HP DL360p Gen8 Intel® Xeon® E5-2603 (1.80GHz/4-core/10MB/80W) Processor Kit	654780-B21
	Base Processors	
	NOTE: All Base Processors support up to 1333MHz DDR3 memory speed.	
	HP DL360p Gen8 Intel® Xeon® E5-2640 (2.50GHz/6-core/15MB/95W) Processor Kit	654770-B21
	HP DL360p Gen8 Intel® Xeon® E5-2630 (2.30GHz/6-core/15MB/95W) Processor Kit	654768-B21
	HP DL360p Gen8 Intel® Xeon® E5-2620 (2.0GHz/6-core/15MB/95W) Processor Kit	654782-B21
	HP DL360p Gen8 Intel® Xeon® E5-2630L (2.0GHz/6-core/15MB/60W) Processor Kit	654764-B21
	Performance Processors	
	NOTE: All support up to 1600MHz DDR3 memory speeds	
	HP DL360p Gen8 Intel® Xeon® E5-2690 (2.90GHz/8-core/20MB/135W) Processor Kit	664011-B21
	HP DL360p Gen8 Intel® Xeon® E5-2680 (2.70GHz/8-core/20MB/130W) Processor Kit	654789-B21
	HP DL360p Gen8 Intel® Xeon® E5-2670 (2.60GHz/8-core/20MB/115W) Processor Kit	654786-B21
	HP DL360p Gen8 Intel® Xeon® E5-2667 (2.90GHz/6-core/15MB/130W) Processor Kit	654791-B21
	HP DL360p Gen8 Intel® Xeon® E5-2665 (2.40GHz/8-core/20MB/115W) Processor Kit	666029-B21
	HP DL360p Gen8 Intel® Xeon® E5-2660 (2.20GHz/8-core/20MB/95W) Processor Kit	654784-B21
	HP DL360p Gen8 Intel® Xeon® E5-2650 (2.0GHz/8-core/20MB/95W) Processor Kit	654772-B21
	HP DL360p Gen8 Intel® Xeon® E5-2650L (1.80GHz/8-core/20MB/70W) Processor Kit	654778-B21
	HP DL360p Gen8 Intel® Xeon® E5-2643 (3.30GHz/4-core/10MB/130W) Processor Kit	654774-B21
	HP DL360p Gen8 Intel® Xeon® E5-2637 (3.0GHz/2-core/15MB/80W) Processor Kit	654776-B21
	NOTE: Up to 2 processors supported. Energy Star - High Performance Model and Energy Star Certified configurations include two processors with 8 Hot Plug Redundant fans.	

NOTE: For the Intel® C600 Chipset E5-2600 Series, the letter preceding the model number indicates the Product Line (E3, E5, E7); 2600x v#, 2 = number of CPUs in a Node, 6 is socket/segment designation, 00 = Processor SKU, x = L for low power SKUs and v# (not yet designated) = version number.

HP Memory	NOTE: HP memory from previous generation servers are not qualified or warranted with this HP ProLiant Server. HP SmartMemory is required to realize the memory performance improvements and enhanced functionality listed in this document for Gen8. For additional information, please see the HP SmartMemory QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/14225_na/14225_na.html NOTE: LRDIMM, RDIMM and UDIMMs are all distinct memory technologies and cannot be mixed within a server. The majority of ProLiant Gen8 servers support RDIMM, UDIMM and LRDIMM.	
	Registered DIMMs (RDIMMs)	
	HP 4GB (1x4GB) Single Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647893-B21
	HP 8GB (1x8GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647897-B21
	HP 16GB (1x16GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647901-B21
	HP 4GB (1x4GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647895-B21
	HP 8GB (1x8GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647899-B21
	HP 16GB (1x16GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	672631-B21
	Unbuffered with ECC DIMMs (UDIMMs)	
	HP 2GB (1x2GB) Single Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit	647905-B21
	HP 4GB (1x4GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit	647907-B21
	HP 8GB (1x8GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit	647909-B21
	Load Reduction DIMMs (LRDIMMs)	
	HP 32GB (1x32GB) Quad Rank x4 PC3L-10600L (DDR3-1333) Load Reduced CAS-9 Low Voltage Memory Kit	647903-B21
	NOTE: All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator. NOTE: Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, see: www.hp.com/go/proliant-energy-efficient. NOTE: PC3L is a low voltage memory.	
HP Optical Drives	HP 9.5mm SATA DVD ROM JackBlack Optical Drive	652238-B21
	HP 9.5mm SATA DVD RW JackBlack Optical Drive	652241-B21

Core Options

HP Hard Drives

NOTE: The HP ProLiant DL360p Gen8 Smart Storage solutions are equipped with entirely re-designed Small Form Factor (SFF 2.5 in) and Large Form Factor (LFF 3.5 in) hot plug carriers for HP Qualified Hard Drives and Solid State Drives. These new carriers provide status and activity indicators as well as caution indicators for "Do Not Remove".

NOTE: The components of a storage subsystem (e.g. the drive, the HBA/controller, firmware, and the server backplane) should operate at the same data transfer rate or the system bandwidth will be negotiated down to an acceptable level for all components.

NOTE: Hard drives have either a one year or three year warranty; refer to the specific hard drive QuickSpecs for details.

SAS Hot Plug with Smart Drive SFF (2.5-inch) Enterprise Drives

HP 900GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652589-B21
HP 600GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652583-B21
HP 450GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652572-B21
HP 300GB 6G SAS 10K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652564-B21
HP 300GB 6G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652611-B21
HP 146GB 6G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652605-B21
HP 72GB 6G SAS 15K rpm SFF (2.5-inch) SC Enterprise 3yr Warranty Hard Drive	652597-B21

SAS Hot Plug Smart Drive SFF (2.5-inch) Midline Drives

HP 1TB 6G SAS 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	652749-B21
HP 500GB 6G SAS 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	652745-B21

SAS Hot Plug Smart Drive LFF (3.5-inch) Enterprise Drives

HP 600GB 6G SAS 15K rpm LFF (3.5-inch) SC Enterprise 3yr Warranty Hard Drive	652620-B21
HP 450GB 6G SAS 15K rpm LFF (3.5-inch) SC Enterprise 3yr Warranty Hard Drive	652615-B21

SAS Hot Plug Smart Drive LFF (3.5-inch) Midline Drives

HP 3TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652766-B21
HP 2TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652757-B21
HP 1TB 6G SAS 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	652753-B21

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/12244_na/12244_na.html (Worldwide)

6G SATA Hot Plug with Smart Drive SFF (2.5-inch) Midline (MDL) Drives

HP 1TB 6G SATA 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	655710-B21
HP 500GB 6G SATA 7.2K rpm SFF (2.5-inch) SC Midline 1yr Warranty Hard Drive	655708-B21

6G SATA Hot Plug with Smart Drive LFF (3.5-inch) Midline (MDL) Drives

HP 3TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	628061-B21
HP 2TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	658079-B21
HP 1TB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	657750-B21
HP 500GB 6G SATA 7.2K rpm LFF (3.5-inch) SC Midline 1yr Warranty Hard Drive	658071-B21

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/13021_na/13021_na.html (Worldwide)

	6G SAS MLC Hot Plug SFF (2.5-inch) Enterprise Mainstream Solid State Drives	
	HP 800GB 6G SAS MLC SFF (2.5-inch) SC Enterprise Mainstream 3yr Warranty Solid State Drive	653109-B21
	HP 400GB 6G SAS MLC SFF (2.5-inch) SC Enterprise Mainstream 3yr Warranty Solid State Drive	653105-B21
	6G SAS SLC Hot Plug SFF (2.5-inch) Enterprise Performance Solid State Drives	
	HP 400GB 6G SAS SLC SFF (2.5-inch) SC Enterprise Performance 3yr Warranty Solid State Drive	653082-B21
	HP 200GB 6G SAS SLC SFF (2.5-inch) SC Enterprise Performance 3yr Warranty Solid State Drive	653078-B21
	3G SATA MLC Hot Plug SFF (2.5-inch) Enterprise Mainstream Solid State Drives	
	HP 400GB 3G SATA MLC SFF (2.5-inch) SC Enterprise Mainstream 3yr Warranty Solid State Drive	653120-B21
	HP 200GB 3G SATA MLC SFF (2.5-inch) SC Enterprise Mainstream 3yr Warranty Solid State Drive	653118-B21
	HP 100GB 3G SATA MLC SFF (2.5-inch) SC Enterprise Mainstream 3yr Warranty Solid State Drive	653112-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/14038_na/14038_na.html (Worldwide)	
	Hard Drive Kits	
	HP SFF Gen8 Hard Drive Blank Kit	666987-B21
	HP LFF Gen8 Hard Drive Blank Kit	666986-B21
	Hard Drive Cables	
	HP DL38x/DL360 Gen8 Embedded SATA Cable Kit	664009-B21
HP Networking	**Gigabit Ethernet Adapters**	
	HP NC112T PCI Express Gigabit Server Adapter	503746-B21
	HP NC365T 4-port Ethernet Server Adapter	593722-B21
	HP Ethernet 1Gb 4-port 331T Adapter	647594-B21
	10 Gigabit Ethernet Adapters NOTE: A minimum of two Gigabytes (2 GB) of server memory is required per each adapter. NOTE: Direct Attach Cable (DAC) for copper environments or fiber transceivers and cables for fiber-optic environments must be purchased separately. See cables/options below.	
	HP NC552SFP 10Gb 2-port Ethernet Server Adapter	614203-B21
	HP NC523SFP 10Gb 2-port Server Adapter	593717-B21
	FlexibleLOM Adapters	
	HP Ethernet 1Gb 4-port 331FLR Adapter	629135-B21
	HP Ethernet 10Gb 2-port 530FLR-SFP+ Adapter	647581-B21
	HP FlexFabric 10Gb 2-port 554FLR-SFP+ Adapter	629142-B21
	Fiber Optic Modules	

	HP BladeSystem c-Class 10Gb Long Range Small Form-Factor Pluggable Option	455886-B21
	HP BladeSystem c-Class 10Gb Short Range Small Form-Factor Pluggable Option	455883-B21
	SFP+	
	HP X132 10G SFP+ LC LR Transceiver	J9151A
	HP X132 10G SFP+ LC SR Transceiver	J9150A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: www.hp.com/go/ProLiantNICs.	
HP InfiniBand	QLogic InfiniBand 4X QDR PCI-E G2 Dual Port HCA	583211-B21
	HP InfiniBand 4X QDR ConnectX-2 PCIe G2 Dual Port HCA	592520-B21
	HP InfiniBand FDR/EN 10/40Gb Dual Port 544QSFP Adapter	649281-B21
	NOTE: For the following two InfiniBand Adapters, only 1 FlexibleLOM can be added to the server, which is selected in Step 2 for the "Configuration Information - Factory Integrated Models" section. These two options are for upgrade or change from original configuration.	
	HP InfiniBand FDR/EN 10/40Gb Dual Port 544FLR-QSFP Adapter	649282-B21
	HP InfiniBand QDR/EN 10Gb Dual Port 544FLR-QSFP Adapter	649283-B21
	NOTE: FLR Indicates new HP FlexibleLOM Adapter series.	
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/13078_na/13078_na.html	
HP Power Supplies	NOTE: Prior to making a power supply selection it is highly recommended that the HP Power Advisor is run to determine the right size power supply for your server configuration. The HP Power Advisor is located at: www.hp.com/go/hppoweradvisor	
	HP Common Slot Platinum Plus Power Supply Kits	
	NOTE: The following Power Supplies offer 94% Efficiency with Intelligent Power Discovery.	
	HP 460W Common Slot Platinum Plus Hot Plug Power Supply Kit	656362-B21
	HP 750W Common Slot Platinum Plus Hot Plug Power Supply Kit	656363-B21
	HP 1200W Common Slot Platinum Plus Hot Plug Power Supply Kit	656364-B21
	HP Common Slot Gold Power Supplies	
	NOTE: The following Power Supplies offer 92% Efficiency.	
	HP 460W Common Slot Gold Hot Plug Power Supply Kit	503296-B21
	HP 750W Common Slot Gold Hot Plug Power Supply Kit	512327-B21
	HP Common Slot -48VDC Power Supplies	
	NOTE: The following Power Supplies offer 92% Efficiency.	
	HP 750W Common Slot -48VDC Hot Plug Power Supply Kit	636673-B21
	NOTE: The HP 750W Common Slot -48VDC power supply has been designed with a terminal block connection allowing for custom design of power cords by the user. However, HP offers multiple cable options for this power supply which can found at www.hp.com/products/powercords.	
	NOTE: Option Kits for AC power supplies include the power supply and one PDU IEC cable.	

Core Options

NOTE: Power Specification and Technical Content for supported power supplies can be found at:
http://h18000.www1.hp.com/products/quickspecs/14209_na/14209_na.html

HP Graphic Options	HP DL360p Gen8 Front Video Adapter Kit	655915-B21

NOTE: Some options may not be integrated at the factory. To ensure only valid configurations are ordered, HP recommends the use of an HP approved configurator. Contact your local sales representative for additional information.

HP Insight Software	HP Insight Control	
	HP Insight Control including 1yr 24x7 Technical Support and Updates Electronic License	T9074BAE
	HP Insight Control including 1yr 24x7 Technical Support and Updates Single Server License	452148-B22
	HP Insight Management Media Kit NOTE: HP Insight Management Media Kit contains DVDs without licenses. Contains HP Systems Insight Manager, HP Insight Control, HP Matrix Operating Environment, and Virtual Connect Enterprise Manager software. Uses an integrated installer to perform quick and accurate software installation and updates.	436222-B21
	HP Insight Control Server Deployment	
	HP Insight Control Server Deployment including 1yr 24x7 Support Electronic License	T9082AAE
	HP Insight Control Server Deployment including 1yr 24x7 Support Single Server License NOTE: Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single activation key. NOTE: Electronic software is available in all countries except China and Japan. Customers in China and Japan should order the physical equivalent. NOTE: Customer will receive a license entitlement certificate. The license entitlement certificate must be redeemed online or via fax in order to obtain the license activation key(s). Includes one year of 24 x 7 HP Software Technical Support and Update Service. NOTE: Licenses ship without media. The HP Insight Management Media Kit can be ordered separately, or can be downloaded at: http://www.hp.com/go/insightupdates. NOTE: For additional license options please see the Insight Control QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/12631_na/12631_na.html	452151-B21
	HP Insight Control for Linux	
	HP Insight Control for Linux including 1yr 24x7 Support Electronic License	TC213AAE
	HP Insight Control for Linux including 1yr 24x7 Support Single Server License	TC209A
	HP Insight Control for Linux Media Kit NOTE: Media pack DVD contains the ISO image for HP Insight Control for Linux, HP Systems Insight Manager, HP Insight Control power management, HP Insight Control virtual machine management, and an integrated installer. Servers must be acquired separately. NOTE: Licenses ship without media. The Media Kit for Insight Control for Linux can be ordered separately, or can be downloaded at: http://www.hp.com/go/ic-linux (click on Download button). NOTE: Electronic software is available in all countries except China and Japan. Customers in China and Japan should order the physical equivalent. NOTE: Electronic and Flexible-Quantity licenses can be used to purchase multiple licenses with a single set of activation keys. NOTE: For additional License Kits, including electronic licensing options, please see the QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/13019_na/13019_na.html	TC208A

Additional Options

HP iLO Advanced License	HP iLO Advanced Pack Electronic License with 3yr 24x7 Tech Support and Updates	BD506AAE
	HP iLO Advanced 1 Server License with 3yr 24x7 Tech Support and Updates	BD505A
	HP iLO Advanced including 1yr 24x7 Technical Support and Updates Single Server License	512485-B21
	NOTE: For more information, visit: http://www.hp.com/go/ilo.	
High Performance Clusters	HP Cluster Management Utility	
	HP Insight Cluster Management Utility 1yr 24x7 Flexible License	QL803B
	HP Insight Cluster Management Utility 3yr 24x7 Flexible License NOTE: These part numbers can be used to purchase one certificate for multiple licenses and support with a single activation key. Each license is for one node (server). Customer will receive a printed end user license agreement and license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online in order to obtain a license key. Customer also will receive a support agreement.	BD476A
	HP Insight Cluster Management Utility Media	BD477A
	NOTE: For additional license kits please see the QuickSpecs at http://h18004.www1.hp.com/products/quickspecs/12612_na/12612_na.html.	
	HP HPC Linux Value Pack	
	HP High Performance Computing Linux Value Pack 1 Processor Flexible License NOTE: This part number can be used to purchase one certificate for multiple licenses with a single activation key. Each license is for one socket (a.k.a. processor). Customer will receive a printed end user license agreement and license entitlement certificate via physical shipment. The license entitlement certificate must be redeemed online in order to obtain a license key.	TC293B
	HP High Performance Computing Linux Value Pack Media Kit NOTE: This part number can be used to purchase media including software and documentation, which will be delivered to the customer.	TC294A
	NOTE: For additional license kits please see the QuickSpecs at http://h18004.www1.hp.com/products/quickspecs/13485_na/13485_na.html.	
HP I/O Accelerator Options	HP 160GB Single Level Cell PCIe ioDrive for ProLiant Servers NOTE: A low-profile PCI bracket is included for use in low-profile slots.	600278-B21
	HP 320GB Multi Level Cell PCIe ioDrive for ProLiant Servers NOTE: A low-profile PCI bracket is included for use in low-profile slots.	600279-B21
	HP 320GB Single Level Cell PCIe ioDrive Duo for ProLiant Servers	600281-B21
	HP 640GB Multi Level Cell PCIe ioDrive Duo for ProLiant Servers	600282-B21
	HP 1.28TB Multi Level Cell PCIe IO Accelerator	641027-B21
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13587_div/13587_div.html (Worldwide)	

Additional Options

HP Security	HP Trusted Platform Module Option	488069-B21
	NOTE: The TPM (Trusted Platform Module) is a microcontroller chip that can securely store artifacts used to authenticate the server platform. These artifacts can include passwords, certificates and encryption keys. Windows® BitLocker™ Drive Encryption (BitLocker) is a data protection feature available in Windows Server® 2008. BitLocker leverages the enhanced security capabilities of a Trusted Platform Module (TPM) version 1.2. The TPM works with BitLocker to help protect user data and to ensure that a server running Windows Server 2008 has not been tampered with while the system was offline. For more information about TPM, including a white paper, go to: www.hp.com/go/TPM.	
	NOTE: ProLiant OS pre-installed units will come with the partition required for TPM deployment.	
	NOTE: The TPM key is unique to every TPM deployed server and must be retained. Misplacing or losing the key could result in data loss.	
	HP 1U Security Bezel Gen8 Kit	664918-B21
HP Storage Controllers	SAS Controllers	
	Smart Array P222 Controller	
	HP Smart Array P222/512 FBWC 6Gb 1-port Int/1-port Ext SAS Controller	631667-B21
	HP Cable Options	
	HP Mini SAS Straight to Left 33in Cable Assembly	662899-B21
	HP DL380p/DL360p Gen8 Embedded SATA Cable Kit	664009-B21
	Smart Array P421 Controller	
	HP Smart Array P421/1GB FBWC 6Gb 2-ports Ext SAS Controller	631673-B21
	HP Smart Array P421/2GB FBWC 6Gb 2-ports Ext SAS Controller	631674-B21
	Optional Upgrades	
	HP 1GB P-series Smart Array Flash Backed Write Cache	631679-B21
	HP 2GB P-series Smart Array Flash Backed Write Cache	631681-B21
	HP 512MB P-series Smart Array Flash Backed Write Cache	661069-B21
	HP Smart Array Advanced Pack 2.0 No Media 1 Server 1yr 24x7 Support Software	BC377A
	HP Smart Array Advanced Pack 2.0 No Media Electronic Lic 1yr 24x7 Support Software	BC390AAE
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/14227_na/14227_na.html (Smart Array P222 Controller) http://h18000.www1.hp.com/products/quickspecs/14229_na/14229_na.html (Smart Array P421 Controller) http://h18000.www1.hp.com/products/quickspecs/13200_na/13200_na.html (Smart Array Advanced Pack)	
	Host Bus Adapter	
	HP H221 Host Bus Adapter	650931-B21
	NOTE: This is a 2 x4 External Port HBA.	
	NOTE: This is only approved for the HP P2000 G3 SAS Modular Smart and tape drives.	

Additional Options

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18004.www1.hp.com/products/quickspecs/14222_na/14222_na.html

SCSI HBA

HP SC11Xe Ultra320 Single Channel/ PCIe x4 SCSI Host Bus Adapter	412911-B21

NOTE: Please see the following QuickSpecs for additional information:
http://h18000.www1.hp.com/products/quickspecs/12566_na/12566_na.html (SC11Xe HBA)

HP Power Cords	HP 0.7m 10A C13-C14 Gray Jumper Cord	A0K03A
	HP 1.37m 10A C13-C14 Gray Jumper Cord	A0K04A
	HP 1.83m 10A C13 CZ Power Cord	AF565A
	HP 1.83m 10A C13 DK Power Cord	AF566A
	HP 1.83m 10A C13 EU Power Cord	AF568A
	HP 1.83m 10A C13 Power Cord	AF564A
	HP 1.83m 10A C13 NBR14136 Brazil Power Cord	AF591A
	HP 1.83m 10A C13 UK Power Cord	AF570A
	HP 1.83m 10A C13 IT/CL Power Cord	AF571A
	HP 2.0m 10A C13-C14 Black Jumper Cord	A0K02A
	HP 2.5m 16A C13 IS1293 India Power Cord	SG579A
	HP 1.83m 10A C13 Power Cord	AF569A
	HP 2.5m 10A C13 ZA Power Cord	AF567A
	HP 2m C13 Japan Power Cord	AF572A
	HP 3.0m 10A C13-C14 Gray Jumper Cord	A0K06A
	HP 3.6m 15A 250V C13-NEMA6-15P Cord	A0N33A
	HP 1.83m 10A C13 CN Power Cord	AF557A
	HP 1.83m 10A C13 KR Power Cord	AF560A
	HP 1.83m 10A C13 TW Power Cord	AF561A
	HP 1.83m 10A C13 Power Cord	AF559A
	HP 1.83m 10A C13 Power Cord	AF556A
	HP 2.0m 10A C13 IN Power Cord	AF562A
	HP 2.5m 10A C13 Power Cord	AF558A
	HP 2m 10A C13-C14 Redundant Jumper Cord	AF573A

Additional Options

HP Backup & Recovery Software	HP Data Protector Express	
	HP Basic Upgrade to Data Protector Express V5 for 1 Server E-LTU	TC333AAE
	HP Basic Upgrade to Data Protector Express V5 for 1 Server LTU	TC333A
	HP Basic Upgrade to Data Protector Express V6 for 1 Server E-LTU	TC333BAE
	HP Basic Upgrade to Data Protector Express V6 for 1 Server LTU	TC333B
	HP Data Protector Express V5.0 for 10 Servers E-LTU	TC332AAE
	HP Data Protector Express V5.0 for 10 Servers LTU	TC332A
	HP Data Protector Express V5.0 for 1 Server E-LTU	TC330AAE
	HP Data Protector Express V5.0 for 1 Server LTU	TC330A
	HP Data Protector Express V5.0 for 3 Servers E-LTU	TC331AAE
	HP Data Protector Express V5.0 for 3 Servers LTU	TC331A
	HP Data Protector Express V6.0 for 10 Server E-LTU	TC332BAE
	HP Data Protector Express V6.0 for 10 Server LTU	TC332B
	HP Data Protector Express V6.0 for 1 Server E-LTU	TC330BAE
	HP Data Protector Express V6.0 for 1 Server LTU	TC330B
	HP Data Protector Express V6.0 for 3 Server E-LTU	TC331BAE
	HP Data Protector Express V6.0 for 3 Server LTU	TC331B
	NOTE: One of these Data Protector Express base products is required. To see available options: http://www.hp.com/go/dataprotectorexpress	
HP Tape Backup	NOTE: For the complete range of tape drives, autoloaders, libraries and media see: http://www.hp.com/go/tape. For hardware and software compatibility of HP tape backup products see: http://www.hp.com/storage/SPOCK.	
	HP LTO-5 Ultrium 3000 SAS Tape Drive in 1U Rackmount NOTE: Connection using HP Smart Array P222 Controller (631667-B21) recommended.	EJ014A
	HP 1U SAS Rack Mount Kit	AE459B
	HP 1/8 G2 LTO-4 Ultrium 1760 SAS Tape Autoloader NOTE: Requires HP 1U Tape Autoloader Rack Kit (AH166A) for rack installation. Connection using HP Smart Array P222 Controller (631667-B21) recommended.	AK377A
	HP MSL2024 1 LTO-4 Ultrium 1760 SAS Tape Library NOTE: Connection using HP Smart Array P222 Controller (631667-B21) recommended.	AK378A
	HP MSL4048 2 LTO-4 Ultrium 1760 SAS Tape Library	AK380A

Additional Options

HP Disk Backup	NOTE: For the complete range of RDX drives and media see: http://www.hp.com/go/rdx. For hardware and software compatibility of HP disk backup products see: http://www.hp.com/storage/SPOCK.	
	HP RDX External Disk Backup Systems	
	HP RDX160 External Removable Disk Backup System	AJ766A
	HP RDX320 External Removable Disk Backup System	AJ768A
	HP RDX500 External Removable Disk Backup System	AJ935A
	HP RDX1000 External Removable Disk Backup System	BV849A
	HP Rack-mount Kits	
	HP 1U SAS Rack Mount Kit	AE459B
	HP 3U Rack-mount SAS Kit	AG576B
	HP 1U USB Rack-Mount Kit	A8007B
	HP RDX Removable Disk Backup Systems USB	
	HP RDX160 Internal Removable Disk Backup System NOTE: For installation into 1U USB Rack-Mount Kit (A8007A). No peripheral bay available for drive installation into the server. 160GB of disk capacity per data cartridge.	AJ765A
	HP RDX320 Internal Removable Disk Backup System NOTE: For installation into 1U USB Rack-Mount Kit (A8007A). No peripheral bay available for drive installation into the server. 320GB of disk capacity per data cartridge.	AJ767A
	HP RDX500 Internal Removable Disk Backup System NOTE: For installation into 1U USB Rack-Mount Kit (A8007A). No peripheral bay available for drive installation into the server. 500GB of disk capacity per data cartridge.	AJ934A
	HP RDX1000 Internal Removable Disk Backup System NOTE: For installation into 1U USB Rack-Mount Kit (A8007A). No peripheral bay available for drive installation into the server. 500GB of disk capacity per data cartridge.	BV847A
HP Modular Cooling System G2	HP Modular Cooling System G2 10642 G2 Expansion Rack	AF026A
	HP Modular Cooling System G2 Rack	AF025A

Additional Options

HP Storage Options	Fibre Channel HBA	
	NOTE: The following is a list of all Fibre Channel Host Bus Adapters for Windows and Linux. For detailed compatibility information please see: http://h18006.www1.hp.com/storage/saninfrastructure/hba.html	
	Brocade Fibre Channel HBAs	
	HP 81B PCIe 8Gb Fibre Channel Single Port Host Bus Adapter	AP769A
	HP 82B PCIe 8Gb Fibre Channel Dual Port Host Bus Adapter	AP770A
	Emulex Fibre Channel HBAs	
	HP 81E 8Gb Single Port PCI-e Fibre Channel Host Bus Adapter	AJ762A
	HP 82E 8Gb Dual Port PCI-e Fibre Channel Host Bus Adapter	AJ763A
	QLogic Fibre Channel HBAs	
	HP 81Q PCI-e Fibre Channel Host Bus Adapter	AK344A
	HP 82Q 8Gb Dual Port PCI-e Fibre Channel Host Bus Adapter	AJ764A
	Converged Network Adapter	
	HP CN1100E Dual Port Converged Network Adapter	BK835A
	HP CN1000Q Dual Port Converged Network Adapter	BS668A
HP Disk Storage Systems	Modular Smart Arrays	
	HP P2000 G3 10GbE iSCSI MSA Dual Controller LFF Array System	AW596A
	HP P2000 G3 10GbE iSCSI MSA Dual Controller SFF Array System	AW597A
	HP P2000 G3 iSCSI MSA Dual Controller LFF Array System	BK830A
	HP P2000 G3 iSCSI MSA Dual Controller SFF Array System	BK831A
	HP P2000 G3 MSA FC Dual Controller LFF Modular Smart Array System	AP845A
	HP P2000 G3 MSA FC Dual Controller SFF Modular Smart Array System	AP846A
	HP P2000 G3 MSA FC/iSCSI Dual Combo Controller LFF Array	AW567A
	HP P2000 G3 MSA FC/iSCSI Dual Combo Controller SFF Array	AW568A
	HP P2000 G3 SAS MSA Dual Controller LFF Array System	AW593A
	HP P2000 G3 SAS MSA Dual Controller SFF Array System	AW594A
	NOTE: Please see the QuickSpecs for additional options and configuration information at: http://h18000.www1.hp.com/products/quickspecs/13551_div/13551_div.html (Worldwide)	
	Disk Enclosures	
	HP D2000 Disk Enclosures	
	HP D2600 Disk Enclosure	AJ940A
	HP D2700 Disk Enclosure	AJ941A
	NOTE: Please see the QuickSpecs for additional options and configuration information at: http://h18000.www1.hp.com/products/quickspecs/13404_div/13404_div.html (Worldwide)	

Additional Options

HP Uninterruptible Power Systems	HP Rack-mountable UPS	
	HP R1500 G3 Uninterruptible Power Supply (UPS)	
	HP R1.5kVA G3 1U INTL Uninterruptible Power System	AF471A
	HP R1.5kVA G3 1U JP/TW Uninterruptible Power System	AF470A
	HP R1.5kVA G3 1U NA Uninterruptible Power System	AF469A
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14059_div/14059_div.html (Worldwide)	
	HP R/T3000 G2 Uninterruptible Power System (UPS)	
	HP R/T3000 G2 2U Detachable Cord High Voltage INTL Uninterruptible Power System	AF468A
	HP R/T3000 G2 2U L530 Low Voltage NA/JP Uninterruptible Power System	AF466A
	HP R/T3000 G2 2U L620 High Voltage NA/JP Uninterruptible Power System	AF467A
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14058_div/14058_div.html (Worldwide)	
	R5000 Uninterruptible Power System (UPS)	
	HP R5KVA 3U IEC309-32A High Voltage INTL Uninterruptible Power System	AF461A
	HP R5KVA 3U L630 High Voltage NA/JP Uninterruptible Power System	AF460A
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14109_div/14109_div.html (Worldwide)	
	R7000 Uninterruptible Power System (UPS)	
	HP R7KVA 4U 50A High Voltage NA/JP Uninterruptible Power System	AF462A
	HP R7KVA 4U IEC-32A High Voltage INTL Uninterruptible Power System	AF463A
	NOTE: Please see the QuickSpecs for additional information: http://h18000.www1.hp.com/products/quickspecs/14110_div/14110_div.html (Worldwide)	
	HP R5KVA and R7KVA 3U Extended Runtime Module	AF464A
	NOTE: For additional information on HP Uninterruptible Power Systems please go to: www.hp.com/servers/rackups.	
	NOTE: For additional information on sizing your HP UPS, please reference: http://www.upssizer.com	
	NOTE: Please see the UPS and PDU cable matrix's on the HP Power Protection and Management page. Under Power Cords, click on the "HP Power Cord Matrix" link. That link will list cable descriptions, requirements, and specifications for UPS and PDU units. Please see the following link: www.hp.com/products/powercords.	
Power Distribution Units	Monitored PDUs	
	HP Monitored Power Distribution Unit: Full Rack Version	
	HP 17.3kVA 24A Dual Three Phase NA/JP Monitored Power Distribution Unit	AF503A
	HP 8.6kVA 24A Single Input Three Phase NA/JP Monitored Power Distribution Unit	AF504A
	HP 16.6kVA 40A Dual Input Single Phase NA/JP Monitored Power Distribution Unit	AF505A
	HP 8.3kVA 40A Single Input Single Phase NA/JP Monitored Power Distribution Unit	AF506A

HP 22.1kVA 16A Dual Input Three Phase INTL Monitored Power Distribution Unit	AF507A
HP 11kVA 16A Single Input Three Phase INTL Monitored Power Distribution Unit	AF508A
HP 14.7kVA 32A Dual Input Single Phase INTL Monitored Power Distribution Unit	AF509A
HP 7.3kVA 32A Single Input Single Phase INTL Monitored Power Distribution Unit	AF510A
HP Monitored Power Distribution Unit: Half Rack Version	
HP 4.9kVA 24A Single Input Single Phase NA/JP Monitored Power Distribution Unit	AF914A
HP 7.3kVA 32A Single Input Three Phase INTL Intelligent Modular Power Distribution Unit	AF536A
HP 17.3kVA 48A Single Input Three Phase NA/JP Monitored Power Distribution Unit	AF916A
HP 7.3kVA 32A Single Input Single Phase INTL Monitored Power Distribution Unit	AF915A
HP 22kVA 32A Single Input Three Phase INTL Monitored Power Distribution Unit	AF917A

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/12118_div/12118_div.html

Modular PDUs 1U/0U

NOTE: 1U/0U mounting brackets shipped with the unit (optimized for 10000 G2 and 9000 series racks).

HP 2.8kVA 24A Low Voltage NA/JP Modular Power Distribution Unit	252663-D71
HP 3.6kVA 16A High Voltage INTL Modular Power Distribution Unit	252663-B24
HP 4.9kVA 24A High Voltage NA/JP Modular Power Distribution Unit	252663-D72
HP 8.3kVA 40A High Voltage INTL Modular Power Distribution Unit	252663-B21
HP 8.3kVA 40A High Voltage NA/JP Modular Power Distribution Unit	252663-D73
HP 8.3kVA 40A High Voltage NA/JP Core Modular Power Distribution Unit	252663-D75
HP 4.9kVA 24A High Voltage NA/JP Core Modular Power Distribution Unit	252663-D74
HP 7.3kVA 32A High Voltage INTL Modular Power Distribution Unit	252663-B31
HP 9.2kVA 40A High Voltage INTL Modular Power Distribution Unit	252663-B32
HP 9.2kVA 40A High Voltage INTL Core Modular Power Distribution Unit	252663-B34
HP 7.3kVA 32A High Voltage INTL Core Modular Power Distribution Unit	252663-B33
HP 22kVA 32A Three Phase INTL Core Modular Power Distribution Unit	AF518A

NOTE: This PDU has a detachable input power cord and allows for adaptability to country specific power requirements.

NOTE: Please see the following QuickSpecs for additional options including shorter jumper cables and country specific power cords:
http://h18000.www1.hp.com/products/quickspecs/11041_div/11041_div.html (Worldwide)

NOTE: Please see the UPS and PDU cable matrix's on the HP Power Protection and Management page. Under Power Cords, click on the "HP Power Cord Matrix" link. That link will list cable descriptions, requirements, and specifications for UPS and PDU units. Please see the following link: www.hp.com/products/powercords.

Additional Options

HP Intelligent Power Distribution Units (iPDU)	**iPDU Core Units**	
	HP 4.9kVA 24A Single Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF520A
	HP 8.3kVA 40A Single Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF521A
	HP 8.6kVA 24A Three Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF522A
	HP 14.4kVA 40A Three Phase NA/JP Intelligent Modular Power Distribution Unit	AF533A
	HP 17.3kVA 48A Three Phase NA/JP Core Intelligent Modular Power Distribution Unit	AF523A
	HP 11.4kVA 16A 415V Three Phase L22-20 NA Core Intelligent Power Distribution Unit	AF900A
	HP 17.3kVA 24A 415V Three Phase L22-30 NA Core Intelligent Power Distribution Unit	AF902A
	HP 17.3kVA 24A 415V Three Phase IEC309 NA Core Intelligent Power Distribution Unit	AF901A
	HP 7.3kVA 32A Single Phase INTL Core Intelligent Modular Power Distribution Unit	AF525A
	HP 11kVA 16A Three Phase INTL Core Intelligent Modular Power Distribution Unit	AF526A
	HP 22kVA 32A Three Phase INTL Core Intelligent Modular Power Distribution Unit	AF527A
	HP 17.3kVA 48A 208V Three Phase 12 Outlet Core NA/JP Intelligent Power Distribution Unit	AF535A
	HP 17.3kVA 24A 415V Three Phase 12 Outlet Core NA/JP Intelligent Power Distribution Unit	AF537A
	HP 22kVA 32A 400V Three Phase 12 Outlet Core INTL Intelligent Power Distribution Unit	AF538A
	iPDU Kits with Standard Extension Bars	
	HP 4.9kVA 24A Single Phase NA/JP Intelligent Modular Power Distribution Kit	AF531A
	HP 8.6kVA 24A Three Phase NA/JP Intelligent Modular Power Distribution Kit	AF532A
	HP 7.3kVA 32A Single Phase INTL Intelligent Modular Power Distribution Kit	AF534A
	iPDU Extension Bars	
	HP 5xC13 Outlets Power and UID LEDs Pair Standard Extension Bar	AF528A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12402_div/12402_div.html (Worldwide)	

HP Rack Series	**HP Rack 10000 G2 Series** (Carbon/Graphite Metallic)	
	HP 10642 G2 Pallet Universal Rack	AF001A
	HP 10642 G2 Shock Universal Rack	AF002A
	HP 10622 G2 Pallet Universal Rack	AF021A
	HP 10622 G2 Shock Universal Rack	AF022A
	HP 10642 G2 Top Exhaust Rack	AF030A
	HP 10647 G2 Pallet Universal Rack	AF031A
	HP 10842 G2 Shock Universal Rack	AF042A
	HP 10636 G2 with Extension Shock Rack	AF014A
	HP 10642 G2 with Extension Shock Rack	AF004A
	HP 10636 G2 Crated Universal Rack	AF013A

HP 10636 G2 Pallet Universal Rack	AF011A
HP 10636 G2 Shock Universal Rack	AF012A
HP 10642 G2 Crated Universal Rack	AF003A
HP 10642 G2 Pallet Universal Rack	AF001A
HP 10642 G2 Shock Universal Rack	AF002A

HP v142 Rack

HP V142 1075mm deep Pallet 100 series Rack	AF046A

NOTE: It is mandatory to use a shock pallet when shipping racks with equipment installed.

NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/12402_div/12402_div.html (Worldwide)

NOTE: For additional information regarding Rack Cabinets, please see the following URL: http://www.hp.com/go/rackandpower.

NOTE: The increasing power of new high-performance processor technology requires increased cooling efficiency for rack-mounted servers. The 10000 G2 Series Racks provide enhanced airflow for maximum cooling, allowing these racks to be fully loaded with servers using the latest processors.

CAUTION: If a third-party rack is used, observe the following additional requirements to ensure adequate airflow and to prevent damage to the equipment: Front and rear doors: If your 42U server rack includes closing front and rear doors, you must allow 830 square inches (5,350 sq cm) of hole evenly distributed from top to bottom to permit adequate airflow (equivalent to the required 64 percent open area for ventilation). Side: The clearance between the installed rack component and the side panels of the rack must be a minimum of 2.75 inches (7 cm).

CAUTION: Always use blanking panels to fill all remaining empty front panel U-spaces in the rack. This arrangement ensures proper airflow. Using a rack without blanking panels results in improper cooling that can lead to thermal damage.

NOTE: Quick deploy rail system provides tool-free support for racks with square or round mounting holes (including Compaq/HP 7000, 9000, 10000 G2 and HP series), with an adjustment range of 24" - 36". The ambidextrous cable management arm can be mounted on either the left or right side for improved cable management.

NOTE: High Airflow Inserts (High Air Flow Rack Door Insert for the 7142 Rack (single) - PN: 327281-B21; or High Air Flow Rack Door Insert for the 7142 Rack (6-pack) - PN: 327281-B22) are required to support the server in the 7000 series racks. The Cable Management Arm is not supported on 7000 series racks.

NOTE: Cable management arm must be removed to access hot-plug power supplies when the cable management arm is mounted on the right.

HP Rack Options

HP USB Keyboard and Mouse

HP USB BFR with PVC Free US Keyboard/Mouse Kit	631341-B21
HP USB BFR with PVC Free UK Keyboard/Mouse Kit	631344-B21
HP USB BFR with PVC Free FR Keyboard/Mouse Kit	631346-B21
HP USB BFR with PVC Free ES Keyboard/Mouse Kit	631348-B21
HP USB BFR with PVC Free DE Keyboard/Mouse Kit	631358-B21
HP USB BFR with PVC Free JP Keyboard/Mouse Kit	631360-B21

HP USB BFR with PVC Free IT Keyboard/Mouse Kit	631362-B21
HP USB BFR with PVC Free CN Keyboard/Mouse Kit	631364-B21
HP USB BFR with PVC Free AE Keyboard/Mouse Kit	638212-B21
HP USB BFR with PVC Free RU Keyboard/Mouse Kit	638214-B21
HP USB BFR with PVC Free IN Keyboard/Mouse Kit	672097-D63
HP USB BFR with PVC Free AP-Intl Keyboard/Mouse Kit	672097-373
HP USB BFR with PVC Free Intl Keyboard/Mouse Kit	672097-B33
HP USB BFR with PVC Free PT Keyboard/Mouse Kit	672097-133
HP USB BFR with PVC Free TR Keyboard/Mouse Kit	672097-143
HP USB BFR with PVC Free CZ Keyboard/Mouse Kit	672097-223
HP USB BFR with PVC Free FI Keyboard/Mouse Kit	672097-353
HP USB BFR with PVC Free SE Keyboard/Mouse Kit	672097-103
HP USB BFR with PVC Free CH Keyboard/Mouse Kit	672097-113
HP USB BFR with PVC Free KR Keyboard/Mouse Kit	672097-KD3

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/13972_na/13972_na.html (Worldwide)

HP TFT7600 G2 KVM Console Rackmount Keyboard Monitor

HP TFT7600 G2 KVM Console Rackmount Keyboard US Monitor	AZ870A
HP TFT7600 G2 KVM Console Rackmount Keyboard US TAA Monitor	AZ885A

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/13731_na/13731_na.html (Worldwide)

HP Server Console Switches

HP Server Console 0x2x8 Port Analog Switch	AF616A
HP Server Console 0x2x16 Port Analog Switch	AF617A
HP TAA 0x2x16xKVM Server Console G2 Switch	AF626A

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/11834_na/11834_na.html (Worldwide)

HP Server Console Switch G2 with Virtual Media & CAC

HP 0x2x16 KVM Server Console Switch G2 with Virtual Media CAC Software	AF618A
HP 0x2x32 KVM Server Console Switch G2 with Virtual Media CAC Software	AF619A
HP KVM CAT5 1-pack USB Interface Adapter	336047-B21

NOTE: Please see the QuickSpecs for Technical Specifications and additional information:
http://h18000.www1.hp.com/products/quickspecs/13475_na/13475_na.html (Worldwide)

HP 1x4 USB/PS2 KVM Console Switch

HP 1x4 USB/PS2 KVM Console Switch	AF611A

Additional Options

	HP 1x1Ex8 KVM IP Console Switch G2 with Virtual Media CAC Software	AF620A
	HP 2x1Ex16 KVM IP Console Switch G2 with Virtual Media CAC Software	AF621A
	HP 4x1Ex32 KVM IP Console Switch G2 with Virtual Media CAC Software	AF622A
	NOTE: Please see the QuickSpecs for Technical Specifications and additional information: http://h18000.www1.hp.com/products/quickspecs/13474_na/13474_na.html (Worldwide)	
	Rail Kits	
	HP 1U Small Form Factor Ball Bearing Gen8 Rail Kit NOTE: For SFF models. NOTE: HP 1U Small Form Factor Ball Bearing Gen8 Rail Kit ships standard with some BTO Preconfigured Channel Models.	663201-B21
	HP 1U Gen8 Cable Management Arm NOTE: The HP 1U Gen8 Cable Management Arm is optional for all models or configurations and is not available with the HP 1U Small Form Factor Friction Sliding Gen8 Rail Kit.	663203-B21
	HP 1U Large Form Factor Ball Bearing Gen8 Rail Kit NOTE: For LFF models.	663202-B21
HP USB and SD Options	HP USB 2-Button Optical Scroll Mouse	DC172B
	HP USB 04 Standard Keyboard	DT528A#ABA
	HP 4GB Secure Digital High Capacity Flash Media Kit NOTE: Blank SD media device is supported for use with VMware and Citrix. SD media must be installed in the internal slot of the ProLiant server. Learn more at: http://www.hp.com/go/proliantvirtualization.	580387-B21
	HP 2GB USB Flash Media Drive Key Kit NOTE: HP qualified blank USB key for use with HP ProLiant servers that support the VMware virtualization environment and other HP value-add software like SmartStart. HP recommends this industry standard USB flash device for use with VMware ESXi. USB device must be installed in the internal slot of the ProLiant server for use with VMware ESXi. Refer to HP VMware Getting Started Guide for installation instructions.	608447-B21

Additional Options

HP Care Pack Services	HP 3 year 24 hour 24x7 Call to Repair ProLiant DL36x p Hardware Support	UP711E
	HP 3 year 4 hour 13x5 ProLiant DL36x p Hardware Support	U4496E
	HP 3 year 4 hour 24x7 ProLiant DL36x p Hardware Support	U4497E
	HP 3 year 6 hour 24x7 Call to Repair ProLiant DL36x p Hardware Support	U4498E
	HP 3 year Support Plus 24 Microsoft ProLiant DL36x p Service	U4509E
	HP 3 year Support Plus 24 SuSE ProLiant DL36x p Service	U6310E
	HP 4 year 24 hour 24x7 Call to Repair ProLiant DL36x p Hardware Support	UP712E
	HP 4 year 4 hour 13x5 ProLiant DL36x p Hardware Support	U8099E
	HP 4 year 4 hour 24x7 ProLiant DL36x p Hardware Support	U8116E
	HP 5 year 24 hour 24x7 Call to Repair ProLiant DL36x p Hardware Support	UP713E
	HP 5 year 4 hour 13x5 ProLiant DL36x p Hardware Support	U8065E
	HP 5 year 4 hour 24x7 ProLiant DL36x p Hardware Support	U8082E
	HP 5y Nbd ProLiant DL360 HW Support	UA007E
	HP Install ProLiant DL360 Service	U4506E
	HP Install ProLiant DL380 Service	U4554E
	HP Install ProLiant Add On/In Option SVC	UH745E
	HP Startup ProLiant DL360 Service	U4507E
	HP Startup ProLiant DL380 Service	U4555E
	HP Startup Essntls Rapid Deployment SVC	U5683E
	HP 3y Nbd ProCare Service	U2Z80E
	HP 3y 4h 24x7 ProCare Service	U2Z86E
	HP 3y Nbd Collab Support	U1J60E
	HP 3y 4h 24x7 Collab Support	U1J66E
	HP 3y Nbd ProCare with IC Service	U3N53E
	HP 3y 4h 24x7 ProCare with IC Service	U3N59E
	HP 3y SupportPlus 24 Service	UM818E

NOTE: For more information, customer/resellers can contact: http://www.hp.com/services/carepack.

HP SmartMemory

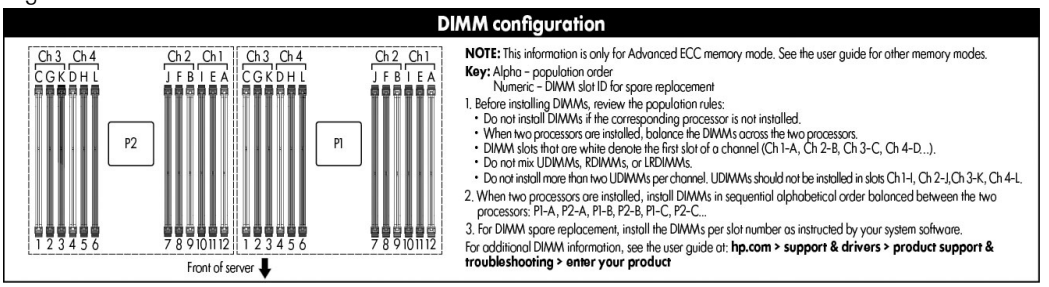
New HP SmartMemory now provides additional protection for your servers. With HP Authentication it can verify that you have true HP Qualified Memory in your HP ProLiant Gen8 server. With HP SmartMemory your new HP ProLiant server can take advantage of additional Gen8 enhancements in performance, durability and future manageability support through HP Active Health System

For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator

Memory Subsystem Architecture

Each Intel® Xeon® E5-2600 family processor socket contains four memory channels that support three DIMMs each for a total of eight (12) DIMM per installed processor or a grand total of Twenty Four (24) DIMMs for the server. Up to 32GB capacity DIMMs are supported for 768GB of max memory (for Best Speed(1600MHz) on run 2 DIMMs per channel or 16 DIMM slots x 16GB per DIMM = 256GB).

Memory population guidelines


DIMM configuration
Ch 3 Ch 4
C G K D H L
Ch 2 Ch 1
J F B I E A
P2
P1
1 2 3 4 5 6
7 8 9 10 11 12
Front of server
NOTE: This information is only for Advanced ECC memory mode. See the user guide for other memory modes.
Key: Alpha – population order
Numeric – DIMM slot ID for spare replacement
1. Before installing DIMMs, review the population rules:
• Do not install DIMMs if the corresponding processor is not installed.
• When two processors are installed, balance the DIMMs across the two processors.
• DIMM slots that are white denote the first slot of a channel (Ch 1-A, Ch 2-B, Ch 3-C, Ch 4-D...).
• Do not mix UDIMMs, RDIMMs, or LRDIMMs.
• Do not install more than two UDIMMs per channel. UDIMMs should not be installed in slots Ch 1-I, Ch 2-J, Ch 3-K, Ch 4-L.
2. When two processors are installed, install DIMMs in sequential alphabetical order balanced between the two processors: P1-A, P2-A, P1-B, P2-B, P1-C, P2-C...
3. For DIMM spare replacement, install the DIMMs per slot number as instructed by your system software.
For additional DIMM information, see the user guide at: hp.com > support & drivers > product support & troubleshooting > enter your product

General Memory Population Rules and Guidelines:

- White DIMM slots denote the first slot of a channel. For 1 DPC (DIMM per channel) populate white slots only.
- A minimum of one DIMM is required per server
- Install DIMMs only if the corresponding processor is installed
- If only one processor is installed in a two processor system, only half of the DIMM slots are available
- To maximize performance, it is recommended to balance the total memory capacity between all installed processors and to load the channels similarly whenever possible
- When two processors are installed, balance the DIMMs across the two processors.
- Populate DIMMs from heaviest load (quad-rank) to lightest load (single-rank) within a channel. Heaviest load (DIMM with most ranks) within a channel goes furthest from the processor
- The Intel Xeon E5-2620 processor does not support DIMMs at 1.35V. Using the HP RBSU, 1.35V DIMMs can be changed to operate at 1.5V.
- Do not mix UDIMMs, RDIMMs or LRDIMMs.
- RDIMMs operating at either 1.35V or 1.5V may be mixed in any order, but the system will power them at the higher voltage
- DIMMs of different speeds may be mixed in any order; the server will select a common optimal speed
- The maximum memory speed is a function of the memory type, memory configuration, and processor model
- The maximum memory capacity is a function of the memory type and number of installed processors
- HP memory from previous generation servers is not compatible with the DL360p Gen8 Server. Certain HP SmartMemory features such as memory authentication and enhanced performance may not be supported.
- To realize the performance memory capabilities listed in this document, HP SmartMemory is required. For additional information, please see the HP SmartMemory QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/14225_div/14225_div.html (Worldwide)
- For memory population rules and additional memory guidelines, please see the DL360p Gen8 user guide at

Memory

http://www.hp.com/support

- There are four (4) Memory channels per processor; eight (8) channels per 2 processor server
- There are three (3) DIMM slots for each memory channel; twenty four (24) total slots for 2 processor server
- Memory channels1 and 3 consists of the three (3) DIMMs that are furthest from the processor
- Memory channel 2 and 4 consists of the three (3) DIMMs that are closest to the processor
- Install DIMMs only if the corresponding processor is installed
- If only one processor is installed in a two processor system, only half of the DIMM slots are available

For Servers with 24 DIMM slots available

DL360p Gen8 Supported Memory Bandwidth and Capacity										
DIMM Type	Registered DIMMS (RDIMMs)						Load Reduced (LRDIMMs)	Unbuffered with ECC DIMMs (UDIMMs)		
DIMM Rank	Single Rank (1R)			Dual Rank (2R)			Quad Rank (4R)	Single Rank (1R)	Dual Rank (2R)	
DIMM Capacity	4GB	4GB	8GB	8GB	16GB	16GB	32GB	2GB	4GB	8GB
DIMM Native Speed (MHz)	1333	1600	1600	1333	1333	1600	1333	1333	1333	1333
Voltage	LV	Std	Std	LV	LV	Std	LV	LV	LV	LV
	SLOTS THAT CAN BE POPULATED									
24 slot servers	24	24	24	24	24	24	24	16	16	16
	MAXIMUM CAPACITY (GB)*									
24 slot servers	96	96	192	192	384	384	768	32	64	128
	POPULATED DIMM SPEED (MHz)									
1 DIMM Per Channel	1333	1600	1600	1333	1333	1600	1333***	1333	1333	1333
2 DIMM Per Channel	1333	1600	1600	1333	1333	1600	1333***	1333****	1333****	1333****
3 DIMM Per Channel	1066**	1066	1066	1066**	1066**	1066*	1066	n/a	n/a	n/a

NOTES:
* Maximum capacity will vary based on individual server platform qualification schedule
** For HP SmartMemory, RDIMM support 3DPC@1066 at 1.35V. Third party memory may only support up to 3DPC@1066 at 1.5V.
*** LRDIMM enables 3 DIMMs per channel. HP SmartMemory will supportsup to 3DPC@1066 at 1.35V. Third party memory may only support 3DPC @1066 at 1.5V.
**** For HP SmartMemory, UDIMM is supported at 2DPC@1333. Third party memory may only support up to 2DPC@1066.

Memory Speed by Processor Model

Processor Models	Supported Memory Speeds
E5-2690 E5-2680, E5-2670, E5-2667, E5-2665, E5-2660, E5-2650, E5-2650L, E5-2643	1600/1333/1066MHz
E5-2640, E5-2637, E5-2630, E5-2630L, E5-2620	1333/1066MHz
E5-2609, E5-2603	1066MHz

Memory

Standard and Maximum Memory Capacity (Pre-configured Models)

Pre Configured Models	Standard Memory	Maximum Memory Plus Optional Memory	Standard Memory Replaced with Optional Memory
Intel Xeon E5-2690, E5-2650	32GB (4x 8GB)	352GB (20x16GB, 4x8GB)	768GB (24 x 32GB)
Intel Xeon E5-2640, E5-2630	16GB (4x 4GB)	336GB (20x16GB, 4x4GB)	768GB (24 x 32GB)
Intel Xeon E5-2603	4GB (1x 4GB)	372GB (23x16GB, 1x4GB)	768GB (24 x 32GB)

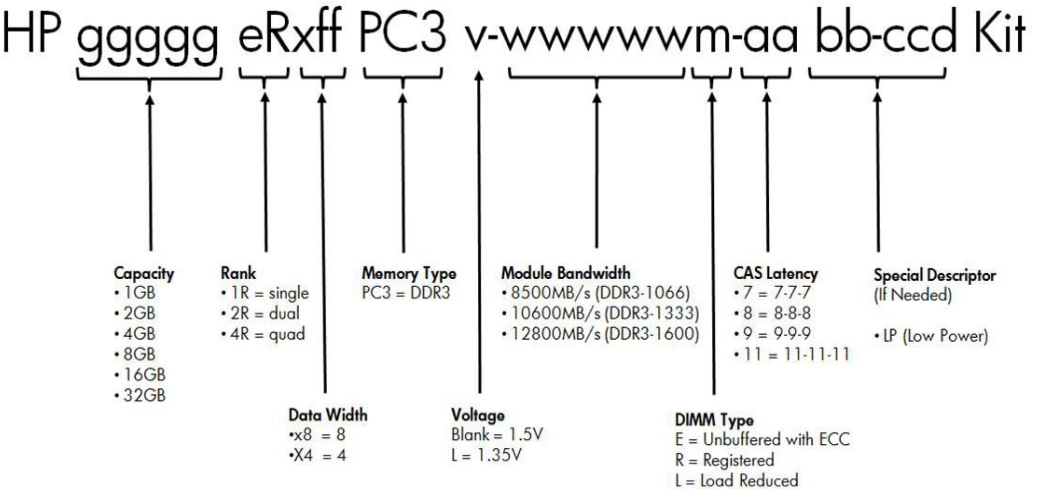
DIMM slot and configuration diagrams
Basic memory slot & population diagram

- Population order; looking from the front of your server CPU#1 is on right side and CPU#2 is on the left. The CPUs sit in the middle of the memory they manage and are populated from the right and left to the center for best performance. See the population order by alphabetic and numeric progression below.

CPU #1 IS PROCESSOR ON RIGHT - LOOKING FROM FRONT OF SERVER													
	Channel 3			Channel 4				Channel 2			Channel 1		
slot #	1	2	3	4	5	6	CPU #1	7	8	9	10	11	12
population order	C	G	K	D	H	L		J	F	B	I	E	A
In Order	3	7	11	4	8	12	-	10	6	2	9	5	1

CPU #2 IS PROCESSOR ON LEFT - LOOKING FROM FRONT OF SERVER													
	Channel 3			Channel 4				Channel 2			Channel 1		
slot #	1	2	3	4	5	6	CPU #2	7	8	9	10	11	12
population order	C	G	K	D	H	L		J	F	B	I	E	A
In Order	3	7	11	4	8	12	-	10	6	2	9	5	1

DDR3 memory options part number decoder



Memory

Following are memory options available from HP:

HP Memory

NOTE: HP memory from previous generation servers are not qualified or warranted with this HP ProLiant Server. HP SmartMemory is required to realize the memory performance improvements and enhanced functionality listed in this document for Gen8. For additional information, please see the HP SmartMemory QuickSpecs at: http://h18000.www1.hp.com/products/quickspecs/14225_na/14225_na.html

NOTE: LRDIMM, RDIMM and UDIMMs are all distinct memory technologies and cannot be mixed within a server. The majority of ProLiant Gen8 servers support RDIMM, UDIMM and LRDIMM.

Registered DIMMs (RDIMMs)

HP 4GB (1x4GB) Single Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647893-B21
HP 8GB (1x8GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647897-B21
HP 16GB (1x16GB) Dual Rank x4 PC3L-10600R (DDR3-1333) Registered CAS-9 Low Voltage Memory Kit	647901-B21
HP 4GB (1x4GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647895-B21
HP 8GB (1x8GB) Single Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	647899-B21
HP 16GB (1x16GB) Dual Rank x4 PC3-12800R (DDR3-1600) Registered CAS-11 Memory Kit	672631-B21
HP 16GB (1x16GB) Dual Rank x4 PC3-10600H (DDR3-1333) HC CAS-9 Memory Kit	678279-B21

Unbuffered with ECC DIMMs (UDIMMs)

HP 2GB (1x2GB) Single Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit	647905-B21
HP 4GB (1x4GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit	647907-B21
HP 8GB (1x8GB) Dual Rank x8 PC3L-10600E (DDR3-1333) Unbuffered CAS-9 Low Voltage Memory Kit	647909-B21

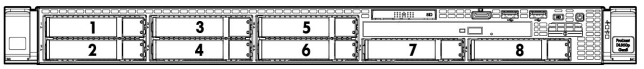
Load Reduction DIMMs (LRDIMMs)

HP 32GB (1x32GB) Quad Rank x4 PC3L-10600L (DDR3-1333) Load Reduced CAS-9 Low Voltage Memory Kit	647903-B21

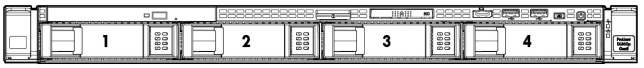
NOTE: All DDR3 memory option kits consist of one DIMM per kit. For detailed memory configuration rules and guidelines, please use the Online DDR3 Memory Configuration Tool: www.hp.com/go/ddr3memory-configurator.

NOTE: Kits described as LP include Low Power DIMMs. For more information on ProLiant Energy Efficient Features, see: www.hp.com/go/proliant-energy-efficient.

NOTE: PC3L is a low voltage memory.



1-8 8 x SFF SATA/SAS/SSD Hot Pluggable Hard Drive Bays with Optical Media Bay option available for this configuration



1-4 4 x LFF SATA/SAS/SSD Hot Pluggable Hard Drives with Optical Media Bay option

Drive Support

External Storage

	Quantity Supported	Position Supported	Host Controller or Adapter
D2600 Disk Enclosure	Up to 4	External	HP Smart Array P222/512MB FBWC Controller
	Up to 8	External	HP Smart Array P421/1GB FBWC Controller HP Smart Array P421/2GB FBWC Controller
D2700 Disk Enclosure	Up to 2	External	HP Smart Array P222/512MB FBWC Controller
	Up to 4	External	HP Smart Array P421/1GB FBWC Controller HP Smart Array P421/2GB FBWC Controller

System Unit	**Dimensions** (H x W x D)	8 SFF	1.7 x 17.1 x 27.5 inches (4.32 x 43.47 x 69.85 cm)	
		4 LFF	1.7 x 17.1 x 29.5 inches (4.32 x 43.47 x 74.67 cm)	
	Weight (approximate)	Maximum (all hard drives, power supply, and processor installed)	8 SFF	38.4 lb (17.4 kg)
			4 LFF	42.6 lb (19.3 kg)
		Minimum (one hard drive, power supply, and processor installed)	32 lb (14.51 kg)	
	Input Requirements (per power supply)	Rated Line Voltage	100 to 120 VAC	
		Rated Input Current	4.5 Amps (at 120VAC) to 2.2 Amps (at 240 VAC)	
		Rated Input Frequency	50 to 60 Hz	
	BTU Rating	Maximum	1773 BTU / hr (at 120 VAC), 1715 (at 240 VAC)	
	Power Supply Output (per power supply)	Rated Steady-State Power	460 W (at 100 to 120 VAC), 460 W (at 200 to 240 VAC) 750 W (at 100 to 120 VAC), 750 W (at 200 to 240 VAC)	
		Maximum Peak Power	460 W (at 100 to 120 VAC), 460 W (at 200 to 240 VAC) 750 W (at 100 to 120 VAC), 750 W (at 200 to 240 VAC)	
			NOTE: See Power Supply Specifications tables for complete details on 460W PSU and optional 750W and 1200W Power Supply Options.	
	System Inlet Temperature	Operating	10° to 35°C (50° to 95°F) at sea level with an altitude derating of 1.0°C per every 305 m (1.8°F per every 1000 ft) above sea level to a maximum of 3050 m (10,000 ft), no direct sustained sunlight. Maximum rate of change is 10°C/hr (18°F/hr). The upper limit may be limited by the type and number of options installed. System performance may be reduced if operating with a fan fault or above 30°C (86°F).	
		Non-operating	-30° to 60°C (-22° to 140°F). Maximum rate of change is 20°C/hr (36°F/hr).	
	Relative Humidity (non-condensing)	Operating	10 to 90% relative humidity (Rh), 28°C (82.4°F) maximum wet bulb temperature, non-condensing.	
		Non-operating	5 to 95% relative humidity (Rh), 38.7°C (101.7°F) maximum wet bulb temperature, non-condensing.	

Altitude	Operating	3050 m (10,000 ft). This value may be limited by the type and number of options installed. Maximum allowable altitude change rate is 457 m/min (1500 ft/min).
	Non-operating	9144 m (30,000 ft). Maximum allowable altitude change rate is 457 m/min (1500 ft/min).

Acoustic Noise

Listed are the declared A-Weighted sound power levels (LWAd) and declared average bystander position A-Weighted sound pressure levels (LpAm) when the product is operating in a 23°C ambient environment. Noise emissions were measured in accordance with ISO 7779 (ECMA 74) and declared in accordance with ISO 9296 (ECMA 109).

Idle (Note 1)

LWAd	5.1 B Average Bystander
LpAm	35.8 dBA

Operating

LWAd	5.4 B Average Bystander
LpAm	39.9 dBA

Idle (Note 2)

LWAd	5.2 B Average Bystander
LpAm	38 dBA

Operating

LWAd	5.9 B Average Bystander
LpAm	41.6 dBA

NOTE: Configuration tested included two Intel E5-2640, 2.5GHz processors, one 500GB SAS HDD, eight system fans, two 4GB RDIMM's 1333MHz, one 460W power supply.
NOTE: Configuration tested included two Intel E5-2640, 2.5GHz processors, four 500GB SAS HDD, eight system fans, sixteen 4GB RDIMM's 1333MHz, one 460W power supply, P421 HDD controller PCI card with 1GB cache.
NOTE: Values are subject to change without notification and are for reference only.
NOTE: Performance of system, options, and ancillary equipment will vary depending on the system configuration.
NOTE: Levels presented do not account for non-Hewlett-Packard installed hardware.

Emissions Classification (EMC)	FCC Rating	Class A
	Normative Standards	CISPR 22; EN55022; EN55024; FCC CFR 47, Pt 15; ICES-003; CNS13438; GB9254; K22;K24; EN 61000-3-2; EN 61000-3-3; EN 60950-1; IEC 60950-1

NOTE: Product conformance to cited product specifications is based on sample (type) testing, evaluation, or assessment. This product or family of products is eligible to bear the appropriate compliance logos and statements.

HP iLO 4 On System	Architecture	PCI Express based health and remote management ASIC

Technical Specifications

Management Processor	Processor	Embedded ARM processor core operating at 400MHz
	Upgradeability	Firmware upgradeable via Flash ROM
	Video Support	1920 x 1200 (16 bpp) DVR max resolution
	Interfaces	One Ethernet Sideband connection (10/100/1000 Mb/s)
		One Ethernet network LAN connection (1 Gbps) for rack, towers and SL systems
		One Ethernet network LAN connection (10/100 Mb/s) for Blade Systems
	Memory	16 MB Flash 256 MB DDR 3 with ECC (112 MB after ECC and video)
	Operating System Support	Microsoft Windows 2008 R2
		Microsoft Windows 2008 (32 bit and 64 bit)
		Microsoft Windows Server 2008 Standard Edition (32 bit and 64 bit)
		Microsoft Windows Server 2008 Enterprise Edition (32 bit and 64 bit)
		Red Hat Enterprise Linux 5.7 (32 bit and 64 bit)
		Red Hat Enterprise Linux 6.0 (32 bit and 64 bit)
		SUSE LINUX Enterprise Server 11 (32 bit and 64 bit)
		SUSE LINUX Enterprise Server 10 (32 bit and 64 bit)
		VMware ESX 4.1
		VMware ESXi 5.0
	Client System Support	Red Hat Enterprise Desktop 5.00
		SUSE Linux Enterprise Desktop 11
		SUSE Linux Enterprise Desktop 10
		Windows 7
		Microsoft Windows XP Professional Edition
		Microsoft Windows Vista Business and Ultimate Editions
	Client Browser Support	Microsoft Internet Explorer 9 NOTE: For customers using Protected Mode, please use the Java based version of Integrated Remote Console.
		Microsoft Internet Explorer 8 NOTE: For customers using Protected Mode, please use the Java based version of Integrated Remote Console.
		Microsoft Internet Explorer 7
		Firefox Extended Support Release (ESR) 10 (on supported Windows and Linux systems
		Firefox 3.6 (on supported Windows and Linux systems)
	Command Line Support	Secure Shell and serial port access
		Secure Socket Layer
		Secure Shell version 2
	Security	Advanced Encryption Standard (AES) and Triple Data Encryption Standard (3DES) on browser, CLP and XML scripting interface
		AES encryption of video
		RC4 encryption of video
	Directory Support Services	Active Directory v1.0 (Windows 2003)

	Driver Support	HP ProLiant iLO 4 Management Controller Driver Package
	Management protocols supported	SNMP, IPMI 2.0 (system and LAN interface), DMTF Systems Management Architecture for Server Hardware Command Line Protocol (SMASH CLP), HP RIBCL XML
HP Smart Array P420i Controller	Dimensions	Embedded
	Disk Drive and Enclosure Interface - Transfer rate	6Gb/s SAS (Serial Attached SCSI) 6Gb/s SATA (Serial ATA)
	SAS Connectors	2 internal 4X connectors
	Cache Memory Speed	512MB FBWC - DDR3-1333MHz with 40-bit wide bus, 1GB or 2 GB FBWC DDR3-1333MHz with 72-bit wide bus
	Server Interface	x8 PCIe 3.0 provides 2GB/s maximum bandwidth
	SAS Speed	8 6Gb/s SAS links provide 4.8GB/s maximum bandwidth
	Cache Memory	Zero Memory RAID has no cache memory 40-bit 512MB ECC protected flash back write cache 72-bit 1GB FBWC or 72-bit 2GB FBWC
	Logical Drives Supported	Zero Memory, Up to 2 logical volumes (8SFF or 4LFF physical drives) Up to 64 logical drives with cache
	Host Memory Addressing	64-bit, supporting greater than 4GB server memory space
	RAID Support	RAID 6, 6+0 (Advanced Data Guarding) NOTE: RAID 6, 6+0 can be enabled with one of the following combinations: • 512 MB FBWC and Smart Array Advanced Pack License key option upgrades • 1G or 2GB FBWC and Smart Array Advanced Pack License key option upgrades RAID 5, 5+0 (Distributed Data Guarding) NOTE: A minimum or 512 MB cache is required to enable RAID 5, 5+0 support RAID 1+0 (Striping & Mirroring) RAID 0 (Striping), RAID 1 (Mirroring)

HP Ethernet 1Gb 4-port 331FLR Adapter	HP Flexible Network Technology	HP FlexibleNet Technology consists of replaceable network solutions to meet the customers require now or in the future. NOTE: Part of the DL360p Gen8 platform is the HP FlexibleLOM. The FlexibleLOM comes in multiple versions and is a removable card system similar to PCI cards. Shown here are the technical specifications for the HP Ethernet 1Gb 4-port 331FLR Adapter on most DL360p Gen8 BTO Entry, Base and Performance models.	
	Network Interface	10Base-T/100Base-TX/1000Base-TX	
	Compatibility	IEEE 802.3 10Base-T IEEE 802.3ab 1000Base-T IEEE 802.3u 100Base-TX IEEE 802.3ad 1000Base-TX IEEE 802.1p 100Base-TX IEEE 802.1q 100Base-TX	
	Data Transfer Method	PCI Express, four lanes (x4)	
	Chipset	BCM5719	
	Network Transfer Rate	10Base-T (Half-Duplex)	10 Mb/s
		10Base-T (Full-Duplex)	20 Mb/s
		100Base-TX (Half-Duplex)	100 Mb/s
		100Base-TX (Full-Duplex)	200 Mb/s
		1000Base-TX (Half and Full-Duplex)	2000Mb/s
	Connector	Two RJ-45	
	Cable Support	10Base-T	Categories 3, 4 or 5 UTP; up to 328 ft (100 m)
		100Base-TX	Category 5 or higher UTP; up to 328 ft (100 m)
		1000BaseTX	Category 5 or higher UTP; up to 328 ft (100 m)

Environment-friendly Products and Approach	End-of-life Management and Recycling	Hewlett-Packard offers end-of-life HP product return, trade-in, and recycling programs in many geographic areas. For trade-in information, please go to: http://www.hp.com/go/green. To recycle your product, please go to: http://www.hp.com/go/green or contact your nearest HP sales office. Products returned to HP will be recycled, recovered or disposed of in a responsible manner. The EU WEEE directive (2002/95/EC) requires manufacturers to provide treatment information for each product type for use by treatment facilities. This information (product disassembly instructions) is posted on the Hewlett Packard web site at: http://www.hp.com/go/green. These instructions may be used by recyclers and other WEEE treatment facilities as well as HP OEM customers who integrate and re-sell HP equipment.

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For hard drives, 1GB = 1 billion bytes. Actual formatted capacity is less.